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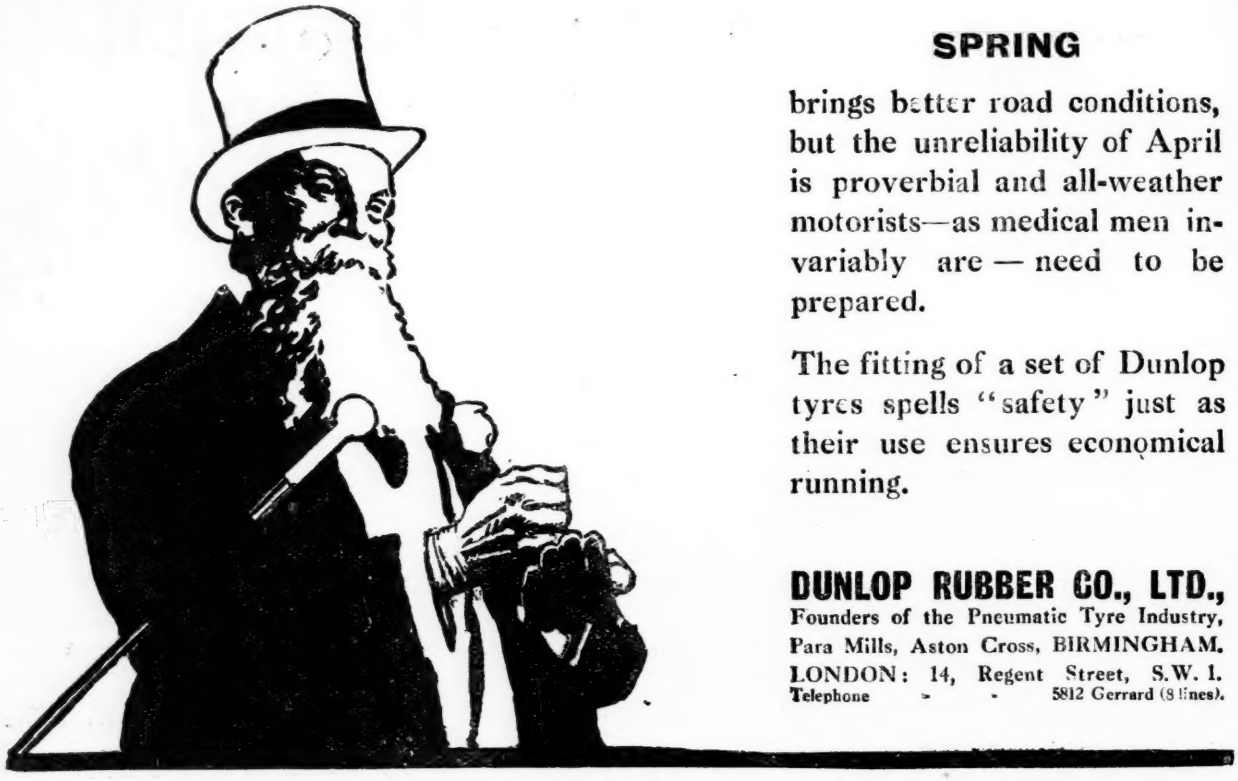

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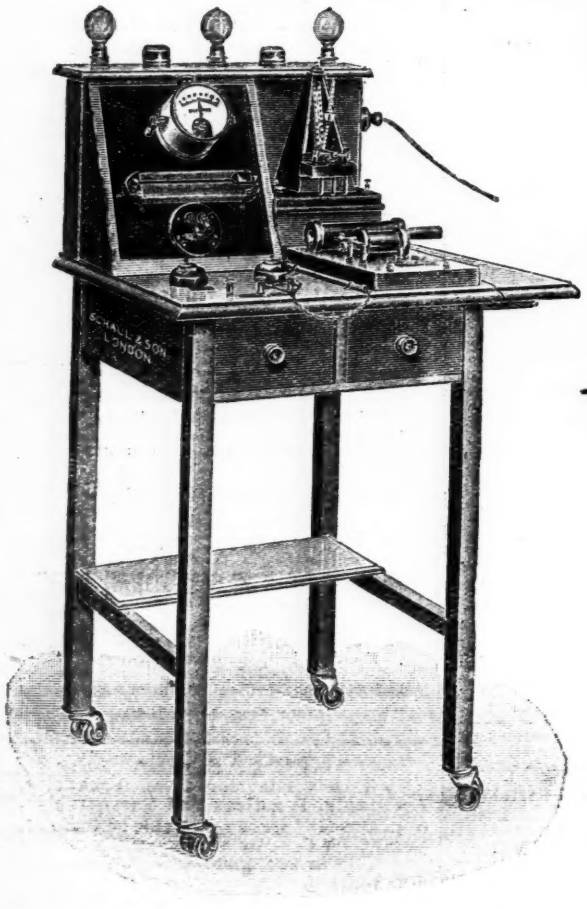

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ON

THE DIAGNOSIS OF DISEASE OF THE PANCREAS.

DELIVERED AT THE LONDON HOSPITAL MEDICAL COLLEGE ON FEBRUARY 20TH, 1920.

BY

SIR ARCHIBALD E. GARROD, K.C.M.G., M.D., LL.D., F.R.S.,

PHYSICIAN TO AND DIRECTOR OF MEDICAL CLINIC AT ST. BARTHOLOMEW'S HOSPITAL; REGIUS PROFESSOR OF MEDICINE DESIGNATE, UNIVERSITY OF OXFORD.

HE who is commemorated in a memorial lecture is often but a dim figure of the past, for whom and for whose work the lecturer can feel only a platonic admiration; but it is a very different matter when one does homage to a man whom he has known and liked, a member of his own university, and a dweller in the next street. Such was Gustave Schorstein, whose too early death left, for all who knew and valued him, a gap not easily filled, a sense of loss of a talented and attractive personality. I esteem it a great privilege to be permitted to pay this tribute to his memory.

This lecture should have been delivered five years ago, but the war and its duties intervened. Now that we are at peace once more, and are trying to make up the time lost during "the years that the locust hath eaten," the invitation has been renewed, and for that honour it is my pleasant duty to return my thanks.

In point of diagnostic display the liver and the pancreas, both glands of many vital functions, may be compared to a shop window and an office door. Derangement of the work of the shop may be obvious to the passer-by in the street, whereas what goes on behind the ground glass of the office door is hidden from public view, and is only manifested in the indirect effects of disorder of the activities within. If only the pancreas produced such a coloured secretion as the bile, how much easier would be the diagnosis of many of its lesions!

As it is the position of the pancreas, sufficiently remote to shield it from examination but not from injury, and the fact that its secretion is poured into so inaccessible a region of the alimentary canal, enabled it for a long time to puzzle the physiologist and to baffle the physician.

In the middle of the last century Sir Thomas Watson,[1] in one of those delightful lectures of his which, in lucidity and literary style, rank with those of Trousseau, spoke as follows: "It may seem a slight to the pancreas to pass it over without noticing the diseases to which it is subject. But really these diseases appear to be but few; and they do not signify their existence by any plain or intelligible signs." Somewhat later Bristowe,[2] in his well known textbook of medicine, expressed his belief that in the great majority of cases pancreatic disease will doubtless remain undetected during life. But some other writers of that period struck a more hopeful note, and among them Wardell,[3] who, in 1871, wrote: "No symptoms are pathognomonic of pancreatic disease; an assemblage of symptoms indicates the probability of its lesion." These words still hold true to-day, and they embody the thesis of this lecture.

It is true that we have learnt to recognize in fat necrosis a sign pathognomonic of certain lesions of the gland; but since this is only made manifest by opening the abdomen it lends us no help at the bedside. One other sign has been claimed as distinctive—namely, true steatorrhoea, which was recognized by Kunzmann[4] as early as 1824, and independently by Richard Bright[5] in 1832, as indicative of pancreatic disease.

Even nowadays pancreatic lesions often escape diagnosis, and Paul Carnot[6] puts his finger upon the cause of many such failures in the following passage: "Le plus difficile est, souvent alors, de songer au pancréas, etant donné la rareté apparente des affections de cette glande." The more constantly we bear the pancreas in mind as a possible seat of origin of obscure abdominal troubles, the less likely shall we be to overlook its lesions. The diagnostic indications at our disposal fall into three main groups. In the first are the clinical signs and symptoms, such as tumour, pain, tenderness, vomiting, cyanosis, and the like, and the signs of pressure upon neighbouring structures. Secondly, we may detect signs of failure of external secretion, defective digestion of proteins, fats, and carbohydrates. Thirdly, indications of failure of internal secretion, of which glycosuria is at the same time the most important and the best known.

TABLE I.—*Pancreatic Signs and Tests.*

Physical Signs and Symptoms.	Defects of External Secretion.	Defects of Internal Secretion.
Aspect	Steatorrhoea	Glycosuria
Tumour	Fatty stools	Lowered sugar tolerance
Pain	Creatorrhoea	Cammidge's tests
Tenderness	Impaired casein digestion	
Cyanosis		
Vomiting		
Constipation	Duodenal sound	
Diarrhoea	Einhorn's method	
Jaundice	Oil breakfast	
Sympathetic signs	Sahli's capsules	
Ocular	Schmidt's test	
Loewi's test	Kashiwado's nuclear test	
	Sajodin test	
	Diastase test, in urine and faeces.	

Lastly, there are certain syndromes which clinical and pathological experience has taught us to associate with lesions of the pancreas. Thus the diagnosis of carcinoma of the head of the gland is often correctly made upon purely clinical evidence, and in cases of bronzed diabetes, with enlarged cirrhotic liver and peculiar pigmentation of the skin, the pancreas is always implicated.

Many ingenious tests of pancreatic efficiency have been devised, and each test has its adherents, and each its critics who question its utility. But surely we are wont to ask too much from such tests. We cannot look to any test for a penny-in-the-slot diagnosis, especially of such widely diverse lesions as those to which the pancreas is liable. At best we cannot hope to gain more than an item of circumstantial evidence which, taken in conjunction with other items, may contribute to a diagnosis of probability, or even of certainty. Taken alone each test may fail or may actually mislead. In some instances a negative, and in others a positive, response carries little weight, and one needs to get to know a test well before he can estimate the significance of its answers.

It is not my intention, nor would it be possible in a single lecture, to describe the many pancreatic tests. In my wards we have employed most of them in turn, and in cases of special difficulty have resorted to many. For some years before the war we were interested in this subject, and it is to the help of a group of active fellow workers that I owe most of such knowledge of it as I possess. I would specially mention my indebtedness to my former house-physician, Dr. Sladden, who has embodied his conclusions in two valuable papers,[7] and to Dr. Mackenzie Wallis, whose M.D. thesis on this subject I have been permitted to read, and who has forgiven me beforehand if I should encroach upon his ground in advance. To Dr. Hurtley, to my assistant Dr. G. Graham, and to Dr. Geoffrey Evans also, I am grateful for much valuable help.

Where there is so great a choice of tests, workers tend naturally to concentrate upon some few which have seemed to them especially useful and easy of application. Each one develops his own routine, and different workers make different choices. The tests upon which one man relies do not necessarily serve another best.

The physical signs and symptoms of disease of the pancreas are best seen in cases of acute pancreatitis, although the large cysts which sometimes spring from the gland produce far more conspicuous swellings, and it is with carcinomata that the pressure signs are most clearly manifested. Nevertheless, the diagnosis of acute pancreatitis is by no means easy in many cases, and the most common false diagnosis is one of acute intestinal obstruction.

A grossly enlarged pancreas forms a tumour in the upper part of the abdomen, lying between the xiphoid cartilage and the umbilicus. It does not move with respiration, and has often but an ill-defined outline. The natural dulness on percussion is obscured by the overlapping of the stomach and intestine. In favourable

cases, in thin subjects, and especially under an anaesthetic, it is even possible to feel a pancreas which is only slightly enlarged, and some have claimed to have felt the normal pancreas. By percussion over the back Dr. Ewart maintains that the size of the gland may be mapped out with considerable accuracy.

The pain of pancreatic disease may be continuous or paroxysmal; it is felt in the abdomen, and is liable to be confused with other acute abdominal pains. My own experience and that of my colleague Mr. Waring, which is considerably greater, leads us to attach much more importance to pain across the back than do most of those who have written upon the subject, and in cases of carcinoma of the pancreas also such pain is often a prominent symptom.

In acute pancreatitis vomiting is usually severe, obstinate constipation tends to strengthen the suspicion of intestinal obstruction, and a feature which has some diagnostic value is a slight degree of cyanosis. The abdomen is usually distended, but, as a rule, there is less rigidity of the muscles than in other acute inflammatory lesions within it.

Of pressure symptoms referable to the diseased pancreas jaundice is by far the most conspicuous, and, in view of the anatomical relations of the gland to the common bile duct, this is in no way surprising. In cases of carcinoma of the head of the gland the jaundice is of extreme degree, and the complete absence of urobilin from the stools shows that the bile duct is completely occluded. Oser[7] suggests, and Sir Mayo Robson[8] also holds, that the so-called catarrhal jaundice may often have its origin in a swelling of the pancreas. We have as yet little knowledge of the slighter inflammatory affections of the gland, but there is one variety the clinical features of which are fairly well known—namely, that which occurs as a metastasis of mumps. Some years ago Dr. Cammidge told me that of eight cases of mumps with abdominal symptoms he had found his test positive in four, and in one of these it was no longer obtained after an interval of a month. Glycosuria was present in one case. Barbieri[9] has recorded a case of temporary glycosuria with this affection, and Finizio[10] one with transitory steatorrhoea, with as much as 60 per cent. of neutral fat in the stools. I have been able to find only a single record of an autopsy in such a case, and in that case alone was jaundice one of the symptoms. Lemoine and Lapasset,[11] who described it, found the pancreas swollen, oedematous, congested, and of a reddish-grey tint.

The absence of jaundice in almost all cases of the pancreatitis of mumps seems to me to afford a strong argument against the connexion of catarrhal jaundice with a catarrhal pancreatitis, and it is certainly no common feature of cases of grave pancreatitis, haemorrhagic or other.

On the other hand, there is, as Mayo Robson has shown, a close connexion between gall-stone troubles and interstitial pancreatitis, and from the anatomical relations of the biliary and pancreatic ducts an infection of the one is likely to spread to the other. So jaundice with pancreas lesions may have other origin than in compression of the bile duct. A tumour of the pancreas may cause considerable obstruction of the duodenum also. Watson mentions this in his lecture already referred to, and actual obstruction may occur in those rare instances in which the head of the gland encircles the duodenum completely. Again, there may be signs of pressure upon the portal vein and vena cava.

In a short paper, published in 1912, Cohn and Peiser[12] called attention to the presence in some cases of pancreatitis of the ocular symptoms which we associate with undue activity of the thyroid gland. Of a series of five cases, three of haemorrhagic, one of suppurative, and one of chronic interstitial pancreatitis, they found some exophthalmos in four, von Graefe's sign in four, Moebius and Stellwag's signs in all five, and also tremor and dermatography in all. However, they wisely decline to draw any sweeping conclusions from so small a number of cases.

Shortly after reading their paper I was able to confirm their observations in a case of which I shall speak later. The association clearly calls for further study, and has very interesting bearings upon the wider subject of the interaction of the thyroid gland and pancreas, of which I hope to treat at greater length on some future occasion.

The experience of many of us who have been engaged on military duties in recent years has taught us to look for signs of hyperthyroidism in conditions which we did not formerly connect with the thyroid gland, and to recognize that the characteristic case of Graves's disease is merely the culminating point of a series of intermediate grades which bridge the gap between it and normality. Moreover, we have witnessed a dissociation of the thyroid symptoms, one patient showing the ocular signs alone, and another tachycardia with tremor. Indeed, it would seem that there are several thyroidal hormones, and that excess of one does not necessarily carry with it excess of another.

Of such conceptions we have long had glimmerings, as witness the use of the term "larval Graves's disease."

As a rule, when thyroidal and pancreatic symptoms are seen in association, the thyroid appears to be the organ primarily at fault, and the observations of Cohn and Peiser, for which the converse holds good, are of all the greater interest on that account.

But if in pancreatitis the eye symptoms referred to are due to excessive thyroid secretion, it is really the sympathetic nervous system which is stimulating the gland to over-activity, and it is not wonderful that the sympathetic should be disturbed when the pancreas is the seat of disease, seeing how near a neighbour it is of the great abdominal ganglia and plexuses. Indeed, many of the symptoms of acute pancreatitis, the severe and often paroxysmal pains, the vomiting and collapse, are, by many, attributed to this proximity. There is evidence, too, of a restraining effect of the pancreas upon the excitability of the sympathetic, an influence which is withdrawn when the pancreas becomes the seat of disease.

It was to test the existence of such a soft-pedal influence that O. Loewi[13] applied his adrenalin mydriasis test to depancreatized cats and dogs. The extension of his observations to human subjects led to the introduction of one of the most interesting, although not one of the most conclusive, of the tests of pancreatic efficiency.

Two or three drops of a 1 in 1,000 solution of adrenalin, freshly prepared, are dropped into the conjunctival sac, and the process is repeated after an interval of five minutes. In the great majority of instances no dilatation of the pupil occurs, but in a few cases there is conspicuous dilatation in the course of half an hour or an hour. The dilated pupil is usually excentric in position, and often conspicuously oval in form. When Loewi first tried the test upon normal people, and upon a series of patients in the Vienna clinics, mydriasis was seen only in 1 of 3 cases of exophthalmic goitre and in 10 out of 18 diabetics. Apparently there were no cases of gross pancreatic disease in the series. Loewi regarded the positive results in some cases of diabetes as indicative of a pancreatic origin, but attributed the mydriasis in the case of exophthalmic goitre to the irritability of the sympathetic in that disease.

Of recent years we have employed Loewi's test widely in my wards, and in my opinion it is of undoubted value in the diagnosis of pancreatic lesions, provided always that its ways have been studied and that its limitations are fully recognized.

The dilatation of the pupil is a decidedly uncommon phenomenon. Unlike Loewi, I have seen it in very few cases of diabetes in which there was no other evidence of lesions of the pancreas, and I have obtained it only once in exophthalmic goitre. We have failed repeatedly to obtain dilatation when the test was repeated, within a day or two, upon an eye which had previously dilated, whereas the mydriasis was again brought about after a longer interval.

The pupils need to be carefully examined before the adrenalin is applied, not only as to their equality, but also to make sure that the iris of the eye tested is mobile. We have been deceived in one case by trying to dilate a pupil fixed by synechiae, and the dilatation is inhibited for a time by the administration of morphine.

The test may fail, at a later stage, in a case in which dilatation had occurred at an earlier period. It may fail in a case in which there is definite disease of the pancreas, and may succeed in another in which there is no gross lesion of the gland. All this sounds very discouraging, but the experience gained in a large number of cases has taught me to regard adrenal mydriasis as strongly suggestive of a pancreatic lesion, and to look upon it as a valuable link in a chain of evidence pointing to such a lesion.

On the other hand, I would *never* venture such a diagnosis upon this reaction alone, nor should I conclude from the absence of any dilatation that the pancreas was intact. Of few of the tests of pancreatic efficiency can more be said.

One of the drawbacks of Loewi's test is that it is, if anything, too delicate, and is wont to give a positive response to a lesion which merely worries the pancreas without involving it to any noteworthy extent. Against this may be set the advantage that the dilatation of the pupil is apt to be most marked at a stage when the excretory functions of the gland are not as yet seriously impaired.

The indications of abeyance of the external secretion of the pancreas, which now claim our attention, are the most valuable aids to diagnosis that we possess, and upon such evidence alone a secure diagnosis may in some cases be based. We may look for failure of the digestion of proteins, fats and carbohydrates alike, for, unlike any other digestive gland, the pancreas takes an important part in the digestion of all three classes of foodstuffs. But, in my opinion, the signs of failure of digestion of fats are the most significant of all.

If there be any single sign which, standing alone, may be regarded as pathognomonic of disease of the pancreas it is true steatorrhoea. By this is meant the passage with the faeces of liquid fat which solidifies on cooling.

Salomon[14] speaks of it as a sign observed only with pancreatic disease, and for my own part I should not hesitate to share his view but for a case which Dr. Hurtley and I investigated some years ago.[15] The patient, a boy then 7 years old, had passed oil with his motions from birth. A younger brother who died of measles at 11 months had exhibited the same anomaly, whereas the three other children had not. The parents are first cousins. The boy was otherwise in good health, well grown, and with no trace of infantilism. Last month I saw him again after an interval of six years, and found that the same still holds good. Although many tests were applied no other sign of lesion of the pancreas could be found, and, in spite of the defect of fat utilization, the digestion of proteins was not impaired, and the stools contained no undigested meat fibres. Apparently this boy is the subject of an inborn error of metabolism, probably due to the absence of a normal enzyme, presumably a pancreatic enzyme. It is difficult to believe that there is any real disease of his pancreas.

There are grounds for the belief that both the external and internal secretions of the pancreas take part in the utilization of fats, the lipase being concerned with the splitting of fats, the internal secretion with their absorption. The gross failure of fat-splitting, which Friedrich Müller[16] described as so characteristic of lesions of the pancreas, may be lacking in cases in which there is conspicuous excess of faecal fat in association with such lesions, and experience teaches us that the total fat content of the stools, made up of fats, fatty acids, and soaps, affords a safer guide. Better still is the information supplied by the far more laborious estimation of the proportion of the fat taken in the food which is lost in the faeces. When, in addition, there is a conspicuous failure to *split* fats the evidence of a lesion of the pancreas is so much the more cogent. In the stools of a healthy man some 75 per cent. of the fat is in the split form, whereas some patients with pancreatic disease pass as little as 20 per cent. in the forms of fatty acids and soaps. The great diagnostic significance of true steatorrhoea arises from the fact that it indicates not only an excess of fats in the stools, but also an undue proportion of neutral fat.

In cases with no gross steatorrhoea the microscope may show abundant fat globules and many acicular crystals of fatty acids. Moreover, the large bulk of the fatty stools may arrest attention, and in some cases they are justly described as elephantine.

The jaundice which is so often associated with obstruction of the pancreatic duct obscures to some extent the indications afforded by the estimation of the faecal fats, for the mere absence of bile from the intestine causes a great impairment of fat absorption; but even when the pancreatic duct alone is blocked widely divergent results are obtained in different cases. Moreover, in the majority of cases of disease of the pancreas there is no blockage of the duct, and the impairment of secretion results from damage to the glandular tissue and is less in degree. A patient with grave disease of the pancreas may pass stools with normal fat-content, and this is true even of some cases in which the duct is obstructed, probably because the duct of Santorini remains patent and provides an emergency outlet.

Even when jaundice is present a proportion of fats in the dried faeces exceeding 40 or 50 per cent. is strongly suggestive of a pancreas lesion, and in some cases there is a percentage of 80 or more.

L. Zoja[17] lays stress upon an unduly low proportion of soaps as indicative of pancreatic disease, presumably from a deficient supply of alkali in the intestine, but our own experience, and that of others, leads us to attach little importance to this sign.

Oskar Gross,[18] who made a very complete study of the fat excretion of two patients with indubitable disease of the pancreas, found that in one case the percentage of the food fat lost in the faeces remained constant, in spite of wide variations in the amounts in the diet, and Hurtley and I found the same to be true for our case of congenital steatorrhoea; but in Gross's second case, and in that investigated by Spriggs and Leigh,[19] the loss of fat became much greater when the fat in the diet was increased. The last named observers suggest that the constant percentage loss may only hold good for cases in which the patient's nutrition remains good. It is a remarkable phenomenon, and one not easily explained, but upon which future work may throw light.

It will be seen, from what has gone before, that a patient whose pancreas is diseased may pass excess of neutral fats in his motions, or a great excess of fats, fatty acids and soaps, without any undue proportion of neutral fat. Lastly, a lesion of the pancreas can by no means be excluded on the ground that the stools contain *no* excess of fatty substances.

Winternitz has introduced a test of the efficiency of the pancreas in dealing with fats. Half a gram of iodo-behenic acid, or the drug sajodin, which is its calcium salt, is given by the mouth, and iodide is looked for in the urine. The sajodin is only broken up when it comes under the influence of the pancreatic juice, and by it *only* in presence of bile. On this account the test is not applicable when the bile duct is completely obstructed. When there is no jaundice, failure to find iodine in the urine suggests that the lipolytic action of the pancreas is in abeyance.

When in addition to impaired splitting or utilization of fats there is obvious failure of protein digestion, the evidence of a pancreatic lesion is wellnigh conclusive. There are many ways in which such failure may be detected, but the simplest of all is at the same time the most convincing. A patient with severe pancreatic disease will, as a rule, pass in his faeces large numbers of muscle fibres, derived from the meat which he eats, undigested and with their striae clearly visible under the microscope. He may also pass particles of undigested tissue, and Albu[20] recommends calf's thymus as an article of diet the structure of which is easily recognized in the stools. For this phenomenon Ehrmann suggested the name "creatorrhoea," by which it is generally called; and although the term invites criticism it is not easy to invent a better.

Creatorrhoea, although it may accompany profuse diarrhoea from any cause, is hardly inferior to fatty stools in diagnostic value, and it has the advantage that it is not affected by blocking of the bile duct. In a case with jaundice in which the indications afforded by the faecal fat are not unequivocal, the discovery of undigested striped muscle fibres in the stools may help materially to clench an otherwise doubtful diagnosis.

Cases are met with in which the syndrome steatorrhoea-creatorrhoea persists for years, in a patient who otherwise enjoys moderately good health, who leads an active life and exhibits no other gross sign of disease. Some such patients have been found to have the duct blocked with calculi, and the structure of the gland destroyed, and yet may never have exhibited glycosuria. In these cases the more elaborate tests will, as a rule, afford additional evidence of disease of the pancreas.

Excessive excretion of nitrogen in the stools, and a consequent inordinate loss of nitrogen as determined by metabolism investigations, affords additional evidence of impairment of protein utilization, but other ferments

besides trypsin take part in this work, and azotorrhoea, so called, is far less distinctive than the escape of striped muscle fibres and nuclei. Moreover, the fatty stools of a patient with pancreatic disease offer a far from ideal material for Kjeldahl estimations.

The majority of the pancreatic tests are concerned with the failure of tryptic digestion. They fall into three main groups of procedures: Some of them aim at obtaining a sample of duodenal contents for examination; others rely upon the dispatch of messengers along the alimentary canal, and the examination of the stools or other secreta for evidence as to what has happened to them in their transit; and yet others upon estimation of the tryptic action of the faeces.

The oil-breakfast test relies upon the fact that, under its influence, some of the contents of the duodenum are regurgitated into the stomach, and may be found in the test meal when it is siphoned off. The technique of the test is comparatively simple, and its results are, as a rule, instructive, but the swallowing of a large dose of olive oil, 2 oz., with a test meal, upon an empty stomach, and its subsequent withdrawal, is a proceeding which has little attraction for the British patient. It has been clearly shown that it is possible to obtain a sample of the secretion in the duodenum, either by means of a suitably constructed duodenal sound, or, better still, by Einhorn's ingenious device of a small metal capsule cased in gelatin and attached to a string or to an india-rubber tube. The capsule is swallowed and is passed on into the duodenum by gastric peristalsis. It is well to check its progress by *x*-ray examination. By this means as much as 5 to 10 c.cm. of duodenal juice may be obtained in favourable cases, and its tryptic activity tested. I have no experience of these methods, and therefore am not in a position to judge of the value of the indications which they afford, nor of the degree of discomfort to the patient which their application may entail. It is obvious that there are possibilities of fallacy, and that, whereas the finding of trypsin in the juice affords positive evidence that pancreatic secretion is entering the duodenum, the failure to find it in the fluid obtained is far less conclusive as evidence of inefficiency of the gland.

Of methods which test the tryptic power of the faeces that of Oskar Gross is most often employed. It is based upon the digestion of casein by an alkaline extract of the faecal material. Failure to digest casein offers strong evidence of pancreatic inefficiency, but, seeing that other ferments in faeces can act like trypsin, a positive outcome of the test, unless very pronounced, has less value.

What may be called the messenger tests are of several kinds. Thus Sahli administered capsules of gelatin hardened by formalin, and enclosing a drug easily detected in the urine or saliva. Provided that the capsule is well made, it is only amenable to tryptic digestion, and escape of the drug is taken to indicate tryptic activity; but a negative finding is far from conclusive. The capsule may resist tryptic digestion, especially if its journey along the alimentary canal be unduly rapid. It is only necessary to mention Schmidt's beef-cube test, and Kashiwado's in which stained nuclei from the calf's thymus are swallowed, mixed with lycopodium granules, the latter to serve as indicators of the part of the faeces to be searched. Sladden, who tried this test on several of my patients, obtained no very encouraging results, and compares the search in the bulky faeces of a patient with pancreatic disease to the proverbial hunt for a needle in a haystack.

It seems to me preferable to rely rather upon such gross phenomena as creatorrhoea and steatorrhoea as indicators of inefficiency of the pancreas, than upon the somewhat uncertain responses of these messenger tests.

To pass on to the consideration of carbohydrate digestion. It was shown by Wohlgemuth, whose observations have been abundantly confirmed, that a diminished output of diastase in the stools, and an increase of that enzyme in the blood and urine, are common phenomena in cases of lesion of the pancreas, and it would seem that we are here dealing with a sort of colourless jaundice, due to an obstructed flow of the pancreatic juice into the intestine, or else to a direct escape of diastase into the blood, comparable to that of lipase which brings about fat necrosis. But there are indications that the explanation of neither of these events may be so simple. However this may be, the estimation of diastase in the urine affords one of the best and most useful tests of the integrity of the pancreas, and at the same time one of those most easily and rapidly carried out. This last is an important matter when we are dealing with acute conditions, in which delay of surgical interference may greatly lessen the prospect of its success. The diastase and adrenalin mydriasis tests may be carried out within an hour, whilst the patient and the theatre are being prepared for an operation. But the diastase test shares the uncertainty which pertains to pancreas tests in general. Instead of the normal ten to twenty, or even thirty, units, to use the accepted measures of the test, a patient with pancreatic disease may excrete in his urine fifty, a hundred, or even two hundred units. On the other hand, another patient similarly affected may show a normal diastase excretion. Mackenzie Wallis emphasizes the fact that the diastase increase is a temporary incident, most conspicuous in the earlier stages of a case. Repeated examinations at intervals may reveal a quicker or slower decline of the diastase output until normal, or even subnormal, figures are reached. Thus it comes about that whereas a conspicuous excess of diastase in the urine is strongly suggestive of disease of the pancreas, a normal excretion, such as was found by Spriggs and Leigh in their case, in no way excludes even advanced disease of that gland.

Nor must it be forgotten that in many cases of renal disease the power of the kidney to excrete diastase is so seriously impaired that its estimation in the urine is utilized as a test of renal efficiency. This deprives the indications of most of their value, for our purpose, in cases with albuminuria. Again, like Loewi's reaction, the diastase test errs on the side of excessive delicacy. Both tests may give positive answers when, so to speak, the pancreas is merely worried by adjacent disease. Thus, when both these tests yield positive findings, strong evidence, stronger by far than either alone supplies, is afforded that the pancreas is at least concerned in the malady; but apart from other indications they are in no way conclusive. Of the two, I attach greater importance to the diastase findings. Undoubtedly the failure of both tests in no way excludes serious pancreatic mischief.

There remains to be considered the evidence of failure of *internal* secretion of the gland. Since the classical researches of von Mehring and Minkowski, glycosuria has occupied a foremost place among the signs of pancreatic lesions, but, from the clinical standpoint, it is far from fulfilling the promise held out by physiological experiments. Whereas it is highly probable that the pancreas is concerned in all cases of glycosuria, save, perhaps, those in which the proportion of sugar in the blood is below the normal, it may well be that in most cases of diabetes the hyperglycaemia and glycosuria result from a disturbance of the normal balance between the pancreas and other endocrine glands, with the result that its internal secretion is inhibited or overpowered. We know that an excess of thyroid secretion may cause glycosuria although the pancreas be intact, and the same holds true for pituitary secretion and adrenalin.

On the other hand, experiments show that a small residue of pancreatic tissue may avert glycosuria, and it is a matter of common knowledge that the gland may be gravely damaged, and even to all appearance destroyed, by disease, and yet the patient may excrete no sugar in his urine. Indeed, it may be said that, except in cases of chronic pancreatitis, glycosuria is an uncommon symptom of pancreatic disease. I am inclined to think that daily observations throughout the illness would reveal the presence of sugar in the urine at times in many more cases than appears at present. In an acute case I have met with it in one single specimen and never afterwards. In cases of carcinoma of the head of the pancreas glycosuria is less rare than might be expected, seeing how large a part of the gland usually escapes invasion, and how little time is afforded for the development of secondary changes. Miraillé [21] found it in 13 out of 50, and Guillou [22] in 20 out of 71 cases.

Speaking generally, the absence of glycosuria affords no argument against the presence of disease of the pancreas, but in not a few cases its presence supplies the crowning evidence in support of a diagnosis based upon other findings. Lastly, even those who attribute all diabetes to disease of this gland will hardly maintain that the presence of glucose in the urine is in itself sufficient evidence of

such disease. Even in chronic interstitial pancreatitis glycosuria is by no means always present, and Opie[23] attributes the difference in this respect to differences in the incidence of the lesion, which in some cases involves, and in others spares, the islands of Langerhans.

Short of actual glycosuria, the patient's tolerance for glucose may be so far lowered that quantities of that sugar far smaller than are required to induce glycosuria in a healthy subject, cause glucose to appear in the urine. Thus tests of sugar tolerance are among the diagnostic means at our disposal; but it must be remembered that almost any disturbance of the balance of the internal secretions leads to an alteration, either a raising or a lowering, of glucose tolerance.

Cammidge's reaction, which may be fitly referred to in this place, is a phenomenon of much interest, the further investigation of which may throw light upon important metabolic events. It is undoubtedly connected with pancreatic derangements, and when observed supplies a contribution to the building up of a diagnosis. But it shares the uncertainty of other pancreatic tests, and may fail us in cases of severe disease of the gland, especially when the disease has reached an advanced stage. So it is natural that many prefer to employ methods which are less time-absorbing, and less at the mercy of small errors of technique. This test has suffered from the fact that too much has been expected from it, perhaps that too much has been claimed for it; and because it has not proved so decisive as was hoped its utility has not received the credit which it deserves. Of Cammidge's iodine coefficient method, which is a development of his original test, I have had no experience.

In this survey of the methods at our disposal for the diagnosis of lesions of the pancreas I have presented to you the separate pieces of a jig-saw puzzle. Only when the several pieces have been fitted together can we form a distinct clinical picture of pancreatic disease. Nor must we forget that when we have determined the seat of a lesion we have attained to only half of a diagnosis. We need to diagnose the nature of the lesion also. As it happens this is, in the conditions under discussion, the less difficult problem of the two.

In the endeavour to diagnose the nature of the more common diseases of the pancreas, such as acute pancreatitis, carcinoma, cysts, and chronic interstitial pancreatitis, we rely mainly upon the evidence afforded by physical signs and symptoms. Here clinical experience, when fortified by the experience gained in the *post-mortem* room, is our best guide, although we may derive no little help from the grouping of the responses of the various tests. Even pancreatic calculi have been diagnosed and removed with success; but it is probable that there will long remain a residuum of cases in which we have reason to believe that the pancreas has been damaged by disease, but in which the nature of the lesion cannot be determined with any degree of accuracy.

In order to illustrate some of these aspects of my subject it will be necessary to place before you brief records of a few characteristic cases, and to indicate the steps by which a diagnosis was arrived at in each instance. The examples chosen were wholly unlike in their general features, and had little in common beyond the fact that in all but one of them the pancreas was or is undoubtedly implicated in disease. Each one illustrates some special diagnostic points.

Case 1.

A man, aged 50 years, a street salesman, was admitted to hospital complaining of abdominal pain. Seven weeks previously he had been thrown from a van, struck his head and abdomen, and was rendered unconscious for a short time. After the accident he suffered from severe pain in his back and vomited each morning. Three days later he returned to work, although he felt very unwell and the vomiting continued. A fortnight before his admission he noticed swelling of the upper part of the abdomen, and was obliged to loosen his belt. Five days later he was seized with a violent pain, of sudden onset, with sweating and collapse. The pain was relieved by hot fomentations. From that date the abdominal swelling increased, the vomiting persisted, his bowels were confined, and he suffered much from thirst. He was brought to the hospital after a second attack of severe abdominal pain.

The man's appearance was suggestive of grave illness; his expression was anxious, his skin moist, and there was a slight degree of cyanosis. His temperature was only 99°, his pulse 110, and respirations 24 in the minute.

Situated in the upper part of the abdomen, midway between the xiphoid cartilage and the umbilicus, was an ill-defined elongated mass, overlapped in part by the gastric resonance. A band of resonance, 1½ inches wide, separated the mass from the hepatic dullness. The tumour did not move with respiration, and no fluctuation could be made out. The abdomen was somewhat distended, but the muscles were not rigid. There was no free fluid in the abdominal cavity. The patient complained of severe pain in the back, across the lumbar region. The mass was very tender, but the greatest tenderness was over the left flank.

It is worthy of note that there was exophthalmos of slight degree; von Graefe's sign was pronounced, and he wrinkled his forehead very little when he looked upwards. A well marked tache could be elicited, but there was no tremor of the hands.

The physical signs and symptoms pointed to a subacute pancreatitis following the injury to the abdomen, and when a specimen of urine was obtained and found to contain sugar, little doubt remained as to the correctness of the diagnosis. My colleague, Mr. Waring, saw the patient with me and concurred, and an operation was decided upon. Meanwhile Dr. Graham estimated the sugar in the blood at 0.21 per cent.; Loewi's reaction was positive but not of an extreme degree, and Dr. Mackenzie Wallis found 50 units of diastase in the urine. At the operation the diagnosis was confirmed. The pancreas was explored and drained.

The man lived six weeks after the operation. On the third day Moebius's sign was present, and von Graefe's persisted, but all the eye signs disappeared before the end. A second specimen of urine obtained before the operation contained no sugar, and none was found at any subsequent examination.

Case 2.

In March, 1919, a carman, aged 59, was admitted to my wards deeply jaundiced, and with a history of three months' illness. On examination his liver was found to be greatly enlarged and of smooth surface; the gall bladder was not palpable. Some enlarged glands were felt in the abdomen. Occult blood was found in the stools, but urobilin was wholly absent—signs which suggested that a malignant growth had occluded the bile duct. Although the clinical features were so unlike those of a classical case of carcinoma of the head of the pancreas, so well described by Bard and Pic,[24] in that the liver was so large, the gall bladder was not palpable, and the patient was neither emaciated nor unduly feeble, the possibility of such a growth was considered, as also that of a malignant growth originating in the bile ducts. It soon became evident that wherever the growth started the pancreas was implicated, and for the following reasons:

Adrenalin caused a conspicuous mydriasis on several occasions; the urinary diastase amounted to 125 units; the total fats of the faeces constituted no less than 70 per cent. of the dried material, and many undigested striped muscle fibres were seen in the faeces.

A week after his admission sugar appeared in the patient's urine for the first time, and the glycosuria persisted until his death. The average daily output of glucose was about 35 grams.

The fat content of the faeces, which was far greater than the jaundice could explain, increased as time went on, whereas the urinary diastase fell gradually from 125 to 60, 25, and 30 units, figures scarcely above the normal.

The patient died after he had been in hospital two and a half months. At the autopsy carcinoma of the head of the pancreas was found; there were no secondary growths in the greatly enlarged liver which had completely hidden the gall bladder which latter, although greatly distended with bile, had never been palpable during life.

Case 3.

The next case to which I shall refer could not be subjected to any systematic investigation. A man,

aged 53, was first seen by me in October, 1910, at the request of his medical attendant, Dr. Robbs. His complaint was that for six months past he had passed oil with his stools, which became solid fat on cooling. In twelve months he had lost a stone of weight. He suffered no pain of any kind. Nothing abnormal could be found on examination of his abdomen; his liver was just palpable; there was neither fullness nor tenderness in the region of the pancreas and there was no jaundice. His urine contained neither sugar nor albumin.

When I saw the patient again, in June, 1913, he had lost another stone, but had developed no fresh symptoms, and his urine was still free of sugar. He was still able to lead an active life. Loewi's test gave no mydriasis, and the urinary diastase did not exceed the normal.

Dr. Cammidge examined his urine and faeces, in January, 1914, and obtained a positive reaction with his test. The total fat in the dried faeces amounted to 51.2 per cent., and of this only 4 per cent. was in the form of soaps. There was obvious creatorrhoea with many undigested muscle fibres in the stools, and by means of Gross's test casein digestion by faecal material was found to be very incomplete.

Dr. Robbs tells me that now, in 1920, the patient's health is better than for some time past, and he has gained seven pounds of weight during the past six months.

Case 4.

The last case is that of a Belgian refugee, aged 32, who was admitted to my wards in January, 1915. For three years he had been liable to paroxysmal attacks of pain, referred to the region between the xiphoid cartilage and the umbilicus. During the attacks, which were obviously very severe, the patient assumed a position of opisthotonos, but he never vomited. It was suspected that he might have a pancreatic calculus, but the *x* rays showed no shadow in that region. Loewi's reaction was conspicuously positive, and the urinary diastase was at first 100 and afterwards 50 units. There was no excess of fat in the stools, no glycosuria, and only 0.12 per cent. of sugar in the blood. Thus the only indications of pancreatic disease were the position of the paroxysmal pain, the excess of diastase in the urine and the adrenal mydriasis. Our investigation of his symptoms was much hampered by the fact that he spoke only Flemish, and a very few words of English.

A month after his admission he passed a large tarry motion. A few days later Mr. Waring performed gastro-jejunostomy. A few days after the operation the patient developed bronchopneumonia, with maniacal delirium, of which he died. At the autopsy a chronic ulcer was found in the second part of the duodenum, three-quarters of an inch in diameter and adherent to the pancreas and adjacent structures. The note describes the pancreas as normal to the naked eye.

If we review these four cases we notice how widely different were the clinical pictures which they presented. In the first case the diagnosis rested mainly upon the clinical signs and symptoms, but several tests of pancreatic efficiency supported the clinical diagnosis. In the second case, that of carcinoma, the evidence of a lesion of the pancreas rested largely upon disturbances of the external and internal secretion of the gland, but was quite conclusive. The only point in doubt was the primary seat of the growth. Except the intense jaundice the clinical signs did not afford much help.

In the third case the associated steatorrhoea and creatorrhoea leave no doubt that the patient is suffering from a severe pancreatic lesion, and Cammidge's test gives further support to this view. Presumably the duct is obstructed, and the pancreas is the seat of interstitial changes. The absence of pain does not exclude the presence of calculi. The failure of the adrenalin and diastase tests in no way invalidates the diagnosis. The case resembles one described by T. J. Walker[25] of a patient whose steatorrhoea persisted from the age of 62 until his death at the age of 90, and whose pancreas was found to be completely obsolete and replaced by fat, and the duct was studded with calculi. In cases in which a like syndrome is presented with glycosuria in addition the patient's health is much more seriously impaired, and the prognosis is far more unfavourable

In the last case, that of the Belgian, we can hardly escape the conclusion that the disturbance of the pancreas by the adjacent ulcer was the cause of the increase of urinary diastase and of the adrenalin mydriasis.

In a case of bronzed diabetes which has been described at length elsewhere[26] we employed several pancreatic tests. Of these Loewi's test, Schmidt's beef-cube test, and the glycosuria pointed to implication of the pancreas, whereas Cammidge's test, the estimation of fat in the faeces, and the determination of the tryptic and diastatic activity of the stools gave no indication of damage to that gland. After death the pancreas was found to be fibrotic, and loaded with iron-containing pigment.

In the case of congenital steatorrhoea, on the other hand, there was no creatorrhoea, the faeces digested casein; Sahli's capsule test and that of Schmidt, a normal diastase content of the urine, and the absence of adrenalin mydriasis, all tended to acquit the pancreas. Cammidge's test alone, kindly carried out by its author, was found to give a "slightly positive result."

TABLE II.

Case.		Loewi's Test.	Fatty Stools.	Creatorrhoea.	Casein Digestion Test.	Sahli's Test.	Schmidt's Test.	Urinary Diastase	Glycosuria.	Jaundice.	Cammidge's Test.
1	Subacute pancreatitis ...	+	—	—	—	—	—	+	+	0	—
2	Carcinoma of head of pancreas	+	+	+	—	—	—	+	+	+	—
3	? Blocked duct, chronic pancreatitis	0	++	+	+	—	—	0	0	0	+
4	Duodenal ulcer adherent to head of pancreas	+	0	0	—	—	—	+	0	0	—
5	Bronzed diabetes, chronic pancreatitis	+	0	?	0	—	+	—	+	0	0
6	Congenital steatorrhoea	0	++	0	0	0	0	0	0	0	?

+ Signifies positive; ++ true steatorrhoea; 0, negative; — not tried.

It will be evident from all that has gone before that practically every sign, symptom, or test may fail us at times, and that in each individual case we need to balance the quantity and quality of the evidence for and against a lesion of the pancreas. In a word, we come back to Wardell's statement of 1871. It is still true that "no symptoms are pathognomonic of pancreatic disease; an assemblage of symptoms points to the probability of its lesion." But we have at our disposal a far greater assemblage of symptoms than Wardell had, and in not a few cases the degree of probability is not to be distinguished from certainty.

That is as much as can be expected when we are dealing with a problem the solution of which rests so largely upon circumstantial rather than direct evidence. If we cannot claim for the diagnosis of pancreatic disease the clear-cut, direct answers obtained in some other regions of clinical medicine and surgery, we may none the less regard with complacency what has so far been accomplished in this field by the application of physiological discovery at the bedside, by the co-operation of the laboratory and the ward.

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INFLUENZA AMONGST THE LAPPS.

BY

A. H. MACKLIN, M.C., M.B., CH.B.VICT.,

LATE ACTING MAJOR R.A.M.C.,

LATE SURGEON, IMPERIAL TRANS-ANTARCTIC EXPEDITION.

DURING the winter of 1918–19 reindeer transport was extensively used by the Syren Force in North Russia. The drivers were all Lapps. As they are nomadic and live widely scattered over a huge area, the officer in charge of reindeer transport spent a great deal of time and had considerable difficulty in maintaining a sufficient supply of drivers. In December, 1918, he reported that "a terrible sickness carrying death wherever it went" had broken out amongst them, making it difficult for him to maintain a sufficient supply for army requirements. He asked that a medical officer should be sent to investigate the cause, and if possible limit its spread.

The A.D.M.S. Syren, anxious that no form of infectious disease should reach British or Allied troops from this source, ordered me to proceed into Lapland, make full investigation, and report as soon as possible.

A start was made at once. I was successful in securing the assistance of Captain Hussey and Lieutenant Stenhouse, R.N., both of them experienced explorers, and the services of an interpreter. We proceeded by train to Kola, where we obtained a Lapp driver and sufficient reindeer and sledges.

Our equipment consisted of a "medical companion" of the usual army pattern, a sleeping bag each, and rations for ten days. The Lapp driver occupied the leading sledge, to which were harnessed three reindeer, each by a single trace, but of unequal length, and with their horns cut so as to fit into the narrowest space possible. Their sledge was flat and built on high runners. The other sledges, which we occupied, were shaped like little boats, with rounded bottoms, drawn by one reindeer each, each reindeer secured by a thong to the sledge in front, and the whole proceeding as a linked-up convoy in single file.

We proceeded into Lapland in this way for a distance of sixty miles, sleeping at night in the open in front of huge fires built by the Lapp driver, or in small huts scattered about the country, the locality of which seemed to be known to our guide. The route followed was first in a south-westerly direction up the frozen surface of the Tuloma River, and then passed over a divide to another frozen river, a process repeated many times, using always the comparatively easy going of the river surfaces. Our track led us through thick, heavily timbered forest, with occasional open glades, the trees heavily covered with rime and very beautiful.

We passed from settlement to settlement, widely scattered, often two to three days' journey apart. Medical notes were made en route. The disease which had broken out proved to be influenza of a very acute type.

The usual course of uncomplicated cases was as follows: Acute onset with rapid rise of temperature, varying from 100° to 103.5°, with heavily-furred tongue, offensive breath, complete loss of appetite, intense headache and great restlessness. The fever lasted from two to four days, ending with sudden resolution of temperature and apparent almost complete recovery. Two good instances of this were a man and a woman, who were seen on the outward stage of our journey on the second day of their illness, and three days later on the return journey, were going about their ordinary duties, apparently little the worse for their illness, complaining of no weakness, and with enormous appetites fully restored.

I had no chance of observing the course of the disease in its continuity, but it appeared that cases which did not recover within four to five days did not recover at all. The chief complication appeared to be bronchopneumonia, from which I gathered there were practically no recoveries. From information, I estimated that about 50 per cent. of all cases died; at any rate the percentage was high.

The Laplanders had a very thorough if unsympathetic way of dealing with their cases. The settlements were composed of wooden huts, small but generally well made and warm. A common type consisted of but one room, used by the family for all purposes. Better class Lapps had better huts, with two or three rooms. In each settlement one of the single-room huts had been set apart, and into this each case of sickness as it arose was unceremoniously pushed; and none were permitted to return to their own huts until completely recovered. Whilst there they received practically no attention, and no healthy person ever entered to attend to their wants. Occasionally a bowl of water or reindeer milk was hastily passed in at the door, or a huge chunk of reindeer meat thrown in, uncooked and uncarved.

We visited every settlement within our reach and entered these huts. The stench on opening the door met one like a poison blast, and the rooms were nearly always ill lighted and dark. The patients lay littered about the floor in a crowded mass, fully dressed in clothes and boots (most of them had no socks), and with no other cover but an occasional greasy rug. Although the outside air was cold and the ground snow-covered, the temperature inside, maintained by the combined mass of bodies, was generally sufficiently high. The patients in these huts included both sexes and all ages; some when we entered sat up, and with flushed faces and dull, uncomprehending eyes, watched us listlessly. Others lay restlessly twisting about, quite incapable of taking any interest or of answering any questions. In these circumstances a thorough examination was difficult, and the difficulty was increased when none of the inmates could speak Russian, for our interpreter did not understand their language, and though many of the Lapps spoke Russian a double interpretation was often required.

Constipation was a constant factor, and many cases had not had their bowels opened since the onset of their illness—in some cases seven to ten days. Others had voided urine and faeces just as they lay. In some huts those of the patients who had passed the worst stages of their illness assisted and looked after those more acutely ill.

There was little I could do with my very limited equipment to improve their lot, and the methods adopted by the Lapps, at first sight so callous and neglectful, appeared to be essential for the preservation of their race. My companions, neither of them medical men but smitten with commiseration for these poor wretches, insisted always on entering the huts, and unused though they were to such conditions, and driven frequently to seek the open air, did their best to straighten things out and make the lot of the inmates a little less hard. I instructed the Lapps to increase the supply of water and milk—both were eagerly drunk—and to substitute reindeer soup for the huge chunks of meat which were always untouched; this they promised to do. We were able to leave them some oxo, and a little tea and sugar, carefully doled out.

On the way back I pondered over the question of what could be done, and what ought to be done to cut short this disease, and improve the conditions of those affected. The parts visited formed but a fringe of the vast area of Lapland, the nomadic tendencies of the inhabitants, whilst making them difficult to find would probably prove beneficial in leaving behind sources of infection. Any organization, to deal adequately with the situation, would, of necessity, be costly, take considerable time to materialize, and be on a vast scale. The Lapps, owing to their poorness in the world's goods, were quite unable to deal efficiently with their sick, and they had no doctors.

Finally, I felt convinced that for them the only possible thing was to do everything possible to stamp out the disease. Methods in civilized countries had had little effect in this way. I decided that their own methods, drastic and unsympathetic though they were, were best, and that the chief care should be directed to preventing spread to our own lines.

Arrangements were made, however, for a supply of quinine (which owing to its bitter taste had a great suggestive value) and of medical comforts, tea, sugar, milk, and oxo, to be sent to those areas supplying drivers and reindeer for the allied armies.

The wave of infection passed rapidly over, and on inquiry four weeks later no cases were reported. I could obtain no statistics of the number of cases in relation to the population, or of the mortality, but consider that the latter must have been high.

Two points particularly interested me:

1. The number of bugs in these pest houses. Their number and size were amazing. I saw no other type of body parasite in Lapland.

2. For less acute diseases the Lapps did not adopt the same drastic attitude. I saw many cases of tuberculosis, including one bed-ridden case of advanced pulmonary tuberculosis. They lived with the rest of the family, and appeared to be well looked after and kindly treated.

CLINICAL ANALYSIS OF 100 CASES OF EARLY BERI-BERI.

BY

H. H. HEPBURN, M.D., C.M.McGILL, F.R.C.S.EDIN.

THE incidence of scurvy and beri-beri among British troops in the East having been recently reported on by Colonel W. H. Willcox, C.B., C.M.G., A.M.S., the following observations may be of general interest:

During 1913 and 1914 I had occasion to investigate a series of cases of early beri-beri at the Police Hospital in Bangkok, Siam, under the direction of Dr. Highet, the P.M.O. While Drs. Morden, Carthiew, and A. C. Rankin were concerned with the problem of etiology, I undertook to analyse the early manifestations of beri-beri, with a view to establishing the correct chronological order of the early signs and symptoms. The completion of my work was interrupted by the war, hence the delay in publication.

The data to follow are compiled from over 300 examinations of 100 cases. All patients were adult Siamese males, and each case was thoroughly examined at least twice.

The first symptom or sign to be noted by the patient was invariably one of the three following: (*a*) Oedema of feet and legs (50 per cent.); (*b*) numbness or anaesthesia of feet (43 per cent.); and (*c*) epigastric fullness and distress (7 per cent.)

TABLE I.—*Early Signs and Symptoms.*

Sign or Symptom.	First Complaint.	Later Complaints.	Not Observed by Patient.
	Cases.	Cases.	Cases.
Oedema of feet...	50	39	11
Anaesthesia of feet	43	57	0
Epigastric distress	7	70	23

In every case the oedema appeared first in the feet, then the legs, and then in the hands. Appreciable swelling of the hands was seldom seen in these early cases. Practically all patients complained of more or less general weakness. Several patients stated that swelling of the feet had come and gone before the onset of anaesthesia. Nine patients complained of early pains in the legs. One developed effusion into both knee-joints, but had a previous rheumatic history. In eighty-two cases the action of the bowels was considered normal. Seventeen were constipated, and one complained of diarrhoea at the date of first examination.

Cardiac enlargement was found at the first examination in only 15 per cent. of cases. Subsequent enlargement occurred in four additional cases in spite of treatment. The treatment adopted was physical rest, with a diet rich in anti-beri-beri vitamines, polished rice being rigidly excluded. Further treatment was largely symptomatic. A soft mitral systolic murmur was heard at the first examination in twenty cases. Cardiac arrhythmia was noted in five of these early cases. The pulse rate per minute is shown in Table II.

TABLE II.—*Pulse Rate.*

In Erect Posture after Walking Ten Yards.		After Sitting for Five Minutes.	
	Cases.		Cases.
80 to 90 per minute ...	14	70 to 80 per minute ...	25
90 to 100 ,, ...	19	80 to 90 ,, ...	27
100 to 110 ,, ...	30	90 to 100 ,, ...	18
110 to 120 ,, ...	20	100 to 110 ,, ...	25
120 to 130 ,, ...	10	110 to 120 ,, ...	5
130 to 140 ,, ...	5	120 to 130 ,, ...	2
140 to 150 ,, ...	2	130 to 140 ,, ...	2

The arterial tension as recorded by the "Tycos" sphygmomanometer at the first examination is shown in Table No. III, the normal in healthy adult natives falling between 90 and 100:

TABLE III.—*Arterial Tension ("Tycos").*

80 to 90	24 cases	100 to 110	22 cases
90 to 100	17 ,,	110 to 120	15 ,,
100 exactly	21 ,,	120 to 130	1 case.

Of 41 cases with a tension below 100, after a few days of treatment 23 were raised to between 95 and 100, whereas of the 38 cases with a tension of over 100, 21 were reduced in a few days to 100.

The knee-jerk is involved early. An increased reaction was observed in a few cases to be followed by diminution or abolition of the reflex. Table No. IV shows the conditions found:

TABLE IV.—*State of the Knee-jerk.*

	Increased.	Normal.	Diminished.	Abolished.
First examination ...	6	23	22	49
Later examination:				
Increased	0	1	0	0
Normal	4	10	7	2
Diminished	1	12	12	9
Abolished	1	0	3	38

The plantar reflex was found to vary in inverse proportion to the anaesthesia. Steppage gait in walking increased with the anaesthesia, and in severe cases amounted to ataxia, with a positive Romberg sign. A positive knee-jerk and abdominal reflex was sometimes obtainable in a patient who was anaesthetic to pain of a pin-prick up to the costal margin.

Sensation to pain of a pin-prick always disappeared before the sensations of superficial touch, deep pressure, and posture.

The degree and extent of anaesthesia, and the condition of the reflexes may fluctuate widely from day to day, recovery frequently being effected with amazing rapidity. For example, deep anaesthesia to pain up to the knees has disappeared in five days. Another case (No. 68) is worthy of special mention. On admission to hospital this patient was anaesthetic to pin-prick up to the umbilicus, with hyperaesthesia shading gradually up to the level of the clavicle. After five days the anaesthesia did not extend beyond the knees. Table V shows the extent of anaesthesia to pin-prick at the first examination. I might add that it is not unusual for a patient to be walking about with anaesthesia to pain of pin-prick up to the level of the umbilicus, or even the clavicle.

TABLE V.—*Extent of Anaesthesia to Pain of Pin-prick.*

	Cases.
Feet only	5
Feet and legs	35
Feet, legs and thighs	9
Feet, legs and hands	4
Feet, legs, thighs and hands	3
Up to level of umbilicus	1
Up to level of second rib	1
Up to level of second rib with hands	5
Up to level of clavicle	1
Up to level of clavicle with hands and wrists ...	5
Up to level of clavicle with all limbs	30
General, including face	2

A LESSON OF THE WAR: SUPPURATIVE MIDDLE-EAR DISEASE.

A PLEA FOR TREATMENT IN ITS EARLIEST STAGES.

BY

H. SMURTHWAITE, M.D.,

SURGEON, THROAT, NOSE, AND EAR DEPARTMENT, ROYAL INFIRMARY, GLOUCESTER.

OUT of 5,000 odd cases under my care at the Throat, Nose, and Ear Department of the Military Hospital, Tidworth, during the year ending October 31st, 1917, no fewer than 890 were suffering from chronic suppurative ear disease—practically a battalion; the period of their disability ranged from a few months to many years, or in the patient's words, "as long as I can remember." A large majority of these cases were only fit for Category C, as it was at that time, whatever some people might say to the contrary. They all suffered from deafness, more or less, and were not fit for the firing line; most of them were in very indifferent health, were anaemic from prolonged suppuration, and consequently a fitting soil for every microbic disease.

A large number were most of their time in the medical officer's hands for treatment, a treatment of syringing and drops, which was only marking time, for little short of a mastoid operation would cure such cases, and space and time would not permit this.

The greatest number of those cases, if not all, would have been "A" men, as far as their ears were concerned, had systematic and energetic treatment been carried out in the earliest days of the onset of the disease. Chronic suppurative ear cases could be enormously reduced if we adopted systematic prophylactic methods and did not wait until the disease was far advanced.

Every fever hospital should have an otologist attached, or at least a medical officer in charge who has a fair knowledge of ear diseases, and who would always be on the alert for its early onset, for these institutions are a fruitful source of suppurating ears, and, what is more, these cases can act as carriers of a specific fever, thus becoming a danger to others coming in contact with them. As bearing on this the following will suffice:

A patient was admitted to a ward in a military hospital of which I had charge in 1915, suffering from slight fever and a profuse discharge from the left ear. Though at the time of admission he had no throat trouble, there was a history of such some three weeks previously. The discharge being profuse and not abated by treatment, a swab from the ear was examined and Klebs-Loeffler bacilli were found in large numbers. The case was promptly isolated. Two days later the patients in the beds on either side of this case developed diphtheria. A day later I myself was a victim to the same disease. No doubt the throat trouble which the ear case had had three weeks before admission had been diphtheria, but probably on account of slight physical local signs had been overlooked, and the disease had in the meantime spread to the ear.

It is in the earliest stages of any disease we have the best chance of obtaining permanent cure; I have invariably admitted to hospital every case of acute otitis media, and every case of suppurating ear when the disease had lasted less than two months, with the certainty of effecting a cure by careful and energetic treatment. Speaking generally, cases beyond this period cannot be so favourably regarded; also they are too numerous to be treated as in-patients, and in the majority permanent damage, more or less, has already been done to the structures in the middle ear, with consequent loss in the hearing power.

During the period mentioned there were 54 cases of acute or subacute otitis media, all of whom left hospital with the discharge ceased, the rent in the drumhead healed, and the hearing restored. Our object must be to gain at once the upper hand in the early stage, and to restore the middle ear to a healthy state before serious changes take place, such as involvement of the antrum and mastoid cells, lateral sinus, or meninges. Even should the patient escape these, there is always, if the suppuration continue for an extended time and finally dry up with the perforation in the drum healed, marked fibrous change in the lining membrane of the middle ear, which must impair the hearing, varying from absolute deafness to loss of the acuteness of hearing.

The pathology of acute middle-ear disease is similar to that of disease of other mucous membranes: dilatation of the vessels, with swelling and lessening the lumen of the cavity. The starting point is invariably the posterior nares, and oftener than not follows the acute febrile diseases—scarlet fever, measles, mumps, influenza, etc. Among the predisposing causes the most important are adenoids, enlarged tonsils, and nasal disease. Inflammation or catarrh in the neighbourhood of the Eustachian tube easily spreads up the tube to the middle ear, and, should its lining membrane become thickened by inflammation, its walls soon come together and block the lumen. The middle ear then becomes an enclosed cavity, with no outlet for the serous fluid thrown out by the engorged vessels, and the patient then experiences fullness in the ear and deafness. The drum membrane has lost its lustre, and in all probability is indrawn, for part of the air in the middle ear has been absorbed, and the external air pressure is greater than that within. If there is much fluid in the middle ear there will be bulging in the posterior quadrant of the drum, and should the dam in the Eustachian tube be allowed to continue many things may happen: the inflammation may slowly resolve, but often it does not, and unless a knife is put into the bulging membrane and politzerization carried out the serous exudation in the middle ear becomes septic, and an abscess forms. The drum becomes intensely red and bulging, and the patient is in great pain until relieved by the abscess bursting into the external auditory canal, leaving a small jagged opening in the membrane. In some cases following the acute infectious diseases, such as scarlet fever, the inflammation spreads so rapidly that the antrum and mastoid cells are acutely attacked before the abscess can burrow through the drum, and an acute mastoid abscess develops, or the inflammation may spread to the meninges or lateral sinus, with, naturally, very grave consequences. It is therefore advisable in all these cases to incise the bulging drum early and so establish drainage as soon as it is certain that the fluid in the middle ear is not subsiding.

Every case of acute middle-ear inflammation should be put to bed and given a brisk calomel purge. If there is any nose or throat trouble this should have appropriate attention. Should the drum membrane be bulging, the external auditory canal should be thoroughly disinfected by swabbing with 1 in 4,000 flavine or 1 in 20 carbolic, and the membrane freely incised under general anaesthesia; the incision should be made in the posterior quadrant just behind the handle of the malleus and running crescentically down to below the tip. Gentle use of the Politzer bag will open the Eustachian tube and force the fluid out of the middle ear. This fluid is then mopped out of the canal; a pledget of cotton-wool soaked in flavine is placed close up to the drum, but must cause no pressure. It should be changed every few hours. I have sometimes plugged the canal lightly with wool soaked in 50 per cent. rectified spirit, which can be increased in strength if it causes no excoriation. At each dressing politzerization should be carried out or the fluid extracted from the middle ear by gentle suction.

For the pain, which is sometimes very acute, glycerin of carbolic, 10 grains to 1 oz., is useful; a few drops warmed in a teaspoon and instilled into the ear, or a few drops of chloroform, will give relief; hot fomentation over the mastoid and auricle is always very soothing to the patient. There is always some post-nasal catarrh, and a warm inhalation of compound tincture of benzoin every two hours will relieve the congestion of the lining of the mouth of the Eustachian tube and help the necessary drainage.

Pain in the ear should never be passed over. It may only have its origin in a carious molar tooth or hard cerumen in the external auditory canal, but it is Nature's danger signal, and should ever be regarded.

The object of this paper is to draw attention to the large number of cases of chronic suppurative ear in England to-day, and to urge that everything in our power should be done to lessen it. A man with ear disease loses from 10 to 70 per cent. value in the labour world.

A large and increasing number of cases is now coming under my notice originating in rupture of the drum by high explosives and secondary infection of the middle ear, which, for lack of continuous and expert treatment, have become chronic. The drum is torn by the terrific concussions of high explosives, and though the man may escape all other injury he is so dazed that he does not notice he is deaf, and possibly has some slight bleeding from one or other ear. A day or so later there is pain in the ear and

a slight muco-purulent discharge. In other cases there was no pain in the ear and only a slight discharge, and the men, thinking it only trivial, did not complain until it became profuse and was accompanied by marked deafness.

During the last twelve months I have examined some hundreds of cases of deafness in varying degree for pension purposes, and I now, as never before, realize at what a disadvantage a man with even a partial loss of hearing is. There are many trades in which good hearing is indispensable. The miner has again and again told me he can no longer get work down the pit on account of his loss of hearing, because he may fail to hear sounds in the pit which portend disaster or death to himself or his comrades. The same applies to many other trades, and the man has to seek other work, each succeeding class of work is more precarious for him, and he is finally driven to casual labour. The poorer classes take but casual notice of the condition of the ear, and this applies especially to suppurative otitis media. Pain is not a frequent concomitant, otherwise they would oftener seek advice. I cannot do better than quote Dr. Mygind of Copenhagen in his book on deaf-mutism. He writes: "It is to be hoped that the recognition which is by degrees, though slowly, being yielded to otology by the medical profession, will make itself felt in the prevention of deaf-mutism, by opening the eyes of the practitioner to the importance of ear diseases and their treatment, and also that the general public may be led to form other opinions upon the subject than those now prevalent."

If by propaganda the poor and so-called working classes could be taught to look upon their hearing as precious, and realize that a "running ear" may lead to the loss of that power and calls at the earliest onset for advice, the efficiency of the nation in general would be increased.

STRANGULATED UMBILICAL HERNIA:

RESECTION OF GANGRENOUS ILEUM AT THE AGE OF 69.

BY

C. M. KENNEDY, M.B.E., F.R.C.S.ENG.,

LATE MAJOR R.A.M.C.(T.C.),

ASSISTANT SURGEON SOUTH DEVON AND EAST CORNWALL HOSPITAL.

SUCCESSFUL resection of gangrenous gut in inguinal and femoral herniae are by no means rare, but in umbilical herniae successful resection is less common. The following case is thought to be of interest because success was attained in spite of the patient's age.

M. P., a widow aged 69, was admitted to the South Devon and East Cornwall Hospital on the afternoon of January 21st, 1920, complaining of severe abdominal pain and vomiting.

Her history was difficult to elicit, and was probably inaccurate. So far as could be discovered she had had an umbilical hernia for many years. She stated that she had had pain in the hernia for more than a week, associated with vomiting. During this time the bowels had been very slightly opened after aperients, and for three or four days had not moved at all. She did not call a doctor in until the day of admission, and he at once sent her to hospital.

On admission she looked ill, and senile beyond her years. The pulse was 94 but weak, the temperature 98°. At the umbilicus was a tense tender red—almost purple—swelling about the size of a cricket ball. There was no impulse on coughing. The rest of the abdomen was somewhat distended, but not tender. The vomit was bile-stained and foul, but hardly "faecal."

Under a chloroform and ether mixture the hernia was surrounded by a transverse elliptical incision, which was deepened to the rectus sheath. The hernia was then lifted off the rectus sheath until the neck was exposed all round. The abdomen was then opened just clear of the neck of the hernia. The hernia was then isolated by extending this incision completely round, but just clear of, the neck. The abdomen was then packed off, and the sac opened by splitting up the neck from what had been its peritoneal aspect. The sac contained a quantity of very foul, almost black, purulent fluid, a mass of adherent and gangrenous omentum, which was ligatured off and removed with the sac, and about four inches of gangrenous ileum. The centre of this length of small gut was of very doubtful viability, but at either end, where it had been nipped, it was reduced to little more than a slough. In order to leave a good margin on either side of the damaged gut about eight or nine inches of gut was resected. Continuity was restored by end to end anastomosis, the collapsed distal portion of the gut being split along its anti-mesenteric border so as to give a sufficient lumen for an anastomosis to the proximal distended gut.

The abdomen was closed in layers by mattress sutures placed transversely (modified Mayo's method). A rubber drain was placed at either angle of the wound, as the subcutaneous fat was considered likely to be infected.

On the day following operation the temperature was 97.4°, the pulse 80, and respirations 22. There was considerable flatulence. The bowels were opened by a turpentine enema on the following day. Thereafter convalescence was smooth but for trifling superficial sepsis necessitating removal of a couple of skin sutures.

The patient left hospital for a convalescent home on February 24th, 1920. She was then in her normal state of health.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SHINGLES AND CHICKEN-POX.

ALMOST immediately after reading Dr. Taylor's neurological jottings in your issue of February 28th, a girl of 16 came to my surgery for some medicine for her father, who had developed shingles about a fortnight before. She asked me about a "rash" which had appeared on her body on the previous day. I found that she was in an early stage of chicken-pox, which subsequently developed, with a temperature of 102°, into a good crop of vesicles. There is no other case of chicken-pox in the neighbourhood. Her father is an instructor in gardening at a boys' home, but there have been no cases amongst the boys, probably because of the work being entirely in the open air.

Chobham, Surrey. A. INGRAM COOKE, M.D.

ACUTE OEDEMA OF THE LUNGS.

I HAVE been much interested in the correspondence on this subject, as, with Dr. Stewart McNaughton (February 28th, p. 293) I believe that the disease is more common than is usually thought. In the autumn of 1897 I reported a case of dramatic severity in the *Lancet*.

The victim was a man aged about 50, who was seized with respiratory distress after a bicycle ride against a cold head wind. He died within an hour of his first symptoms, and for the last few minutes of his life poured out pints of bright pink foam. Auscultation revealed the presence of fine crepitant râles, commencing at the bases and very rapidly spreading upwards. There was a history of some previous renal mischief.

Within a few months I saw a woman of much the same age who fell ill suddenly after cleaning out a flooded basement. Her condition was less acute. The expectoration was aërated, bright pink, but not so great in quantity, nor so frothy. She lived a few hours.

Again, a man of 60 was placed under my care with a story of recurring suffocative attacks at night. He had aortic regurgitation. The urine was of low gravity, and contained a trace of albumin. During a period of perhaps two months he called me some half-dozen times, always a little before midnight. He was invariably in great distress, standing with both hands grasping the bed rail. The sputum was more or less frothy and coloured red. A hypodermic injection of atropine would relieve him at once, allow him to go back to bed, and in the morning he would be quite recovered. The fine râle was very evident in this case, and the rapidity of the upward extension remarkable. His last attack was more severe and I was longer in reaching him. This time atropine failed to check the secretion, and he died expelling much frothy sputum.

Two other cases of recurrent oedema occur to me. One in a woman of over 70, suffering from mitral regurgitation; the other in a woman of 60, suffering from myocardial degeneration. In each instance the crises were spread over a period of two or three years at varying intervals of months. In each there was the great distress, the rapidly ascending râle, and the tinged aërated sputum. Atropine acted well in both and promptly relieved the condition.

The older patient eventually, after her cardiac condition had badly deteriorated, died in an attack, in spite of the usual dose. The other died of gradual heart failure and generalized oedema. The last time I saw the condition was in the following case:

A man of 46. He suffered from extreme arterial high tension, and gave a history of a former but milder bout.

I was called in the night to find him intensely dyspnoeic, unable to move or lie down. There was the usual type of sputum; but for the first time in my experience the râles were the most abundant at the upper part of the lungs. A dose of atropine relieved at once and allowed him to return to bed. In the morning he was quite well.

There are differences in all these cases, but they clearly belong to one group. It is noticeable that where a history

is available all suffered from renal or cardio-vascular changes.

The first case to receive atropine dates back twenty years. I gave it after thinking over the first two, who died quite unrelieved by such treatment as I could then devise.

The disease appears to be due to acute hyperaemia of the small bronchioles, and atropine acts presumably by stopping their secretion. All these patients lived close at hand, and had it been otherwise would probably have died without recognition of the real mode of death.

Lilton, Devon. CECIL MUSGRAVE, M.D.Lond.

THE PATH OF THE ECLAMPTIC TOXIN.

IT is taught that eclampsia is due to a toxin, but what that toxin is has not yet been proved. No attempt will be made to do this here, but a suggestion as to how the toxin acts may be of some value in deciding what is the most rational method of treatment. Needless to say the ideas arose after reading McCarrison's work on the thyroid.

Spinal anaesthesia is produced by injecting a local anaesthetic, such as stovaine, into the spinal canal—by, that is to say, bringing a paralysing substance into contact with the spinal cord. If instead of a paralysing substance an irritant, like the toxin of eclampsia, is mingled with the cerebro-spinal fluid, we would expect the results of irritation—namely, convulsions, as in eclampsia.

If it be true that the eclamptic toxin is to be found in the cerebro-spinal fluid, it must get there through the choroid plexus, which normally secretes the fluid. The choroid plexus is a true secreting gland, and in health has a selective action which prevents toxic bodies passing from the blood to the cerebro-spinal fluid. If from disturbed function this selective action is lost, toxins will pass through the gland to the spinal canal, and those toxins may be the toxins of eclampsia.

The choroid plexus, which is an internally secreting gland, is controlled by hormones produced by the thyroid gland (or more probably the parathyroid) according to my interpretation of McCarrison's teaching. Hence a deranged thyroid entails a deranged choroid plexus from hormone starvation.

McCarrison mentions two classes of toxins: (1) Those resulting from endogenous metabolism, and (2) toxins of bacterial action.

Possibly the first class, by their presence in the cerebro-spinal fluid, are responsible for the symptoms of eclampsia. Normally the kidneys would excrete these toxins. In pregnancy they are much increased in quantity.

From McCarrison's work it seems reasonable that the bacterial toxins bring about the disordered condition of the thyroid, and that they are elaborated in the alimentary canal. He points out the frequent enlargement of the thyroid in pregnancy. On account of the presence of the fetus the thyroid must increase its activity, and since it is acting under greater pressure is more easily disturbed. Most obstetricians believe that the toxin of eclampsia is elaborated in the alimentary canal of the mother. This is compatible with the above suggestions.

To sum up: bacterial toxins elaborated in the alimentary canal are absorbed into the blood and carried to the thyroid apparatus, upon which they act injuriously and cause insufficient hormone production. This leads to choroid plexus insufficiency with loss of selective action, which permits (toxic) endogenous products of metabolism to enter the cerebro-spinal fluid, where they act upon the central nervous system and produce the condition of eclampsia

If this view be correct, the rational treatment would be:

1. To remove the organisms which form the toxins from the alimentary canal.
2. To remove toxins, both bacterial and metabolic, from the blood.
3. To remove toxins from the spinal canal.
4. To supply hormones to activate the choroid plexus.
5. To treat symptoms as they arise.

To meet the first point, the stomach and bowel are washed out and purgatives given; the second is met by venesection, saline purgatives, counter-irritation of the kidneys, and transfusion; toxins are removed from the spinal canal by lumbar puncture, and hormones supplied by giving thyroid extract. Symptoms must be treated as they arise (for example, fits controlled with morphine or chloral), since the toxins cannot be removed completely or immediately from the system. A local anaesthetic might, perhaps, be injected into the spinal canal with benefit after lumbar puncture.

Belfast. J. F. D. HUNTER, M.B.

Reports of Societies.

VENEREAL DISEASE.

A MEETING of the Bradford Medico-Chirurgical Society held at the Royal Infirmary on Tuesday, March 16th, was devoted to venereal diseases. Dr. H. H. WHITE read a paper entitled "A brief review of venereal diseases with special reference to modern methods of treatment, some points in diagnosis and some complications." He pointed out that gonorrhoea was a most difficult disease to treat and cure. Patients rarely came early enough for it to be possible to abort it, though he had recently aborted one case with 15 per cent. argyrol twice a day for three days, followed by irrigation with potassium permanganate, and had seen other cases aborted with acriflavine. In the acute stage the best results were obtained by irrigation with potassium permanganate and sodium carbonate, prescribing an alkaline mixture, and rest in bed. When the posterior urethra was affected the case was much more difficult to cure, and the prostate should then always be examined. The complications of gonorrhoea were legion, and he described them and their treatment. He dealt also with gonorrhoea in women, and the difficulty of diagnosing it clinically; he described its treatment, and pointed out that the urethra in women was a common hiding-place for the gonococcus, and that this was the chief source of conveying the disease to others. He then dealt with syphilis, and said that as soon as dark-ground illumination showed the spirochaete, treatment with 606 or 914 should be given forthwith. He showed the importance of not accepting an early negative report as proof that the disease did not exist, and described the untoward results following injection of 606 and 914.

Dr. W. CAMPBELL read a paper on "Matters relating to the diagnosis of syphilis and to the serological methods used in the control of treatment." He indicated the various sources of error in the Wassermann reaction, and showed serums illustrating these errors. He demonstrated the necessity of titrating antigen so as just to exclude a non-specific reaction in cases of psoriasis, and pointed out the importance of examining the blood as soon as possible after its removal from the patient to prevent the serum becoming anti-complementary. The Wassermann reaction of the cerebro-spinal fluid was also dealt with. The discussion was continued by Drs. MARGARET SHARP, MARTIN, HAMBLEY-ROWE, BUCHAN, and others.

Reviews.

A MANUAL OF WAR SURGERY.

A Manual of War Surgery,[1] edited by Colonel SEYMOUR BARLING and Major J. T. MORRISON, contains sixteen chapters to which some seventeen independent authors contribute. Its scope is restricted to the surgical methods employed in the large military hospitals at the various bases in France. As Sir George Makins remarks in an introduction he has written to the volume, "few men are in a position to write with confidence and authority on the progress and treatment of gunshot injuries from the time of reception of the wound to the period of actual recovery and cure." Yet the picture can be reconstructed, and the important intermediate stage, comprising the patient's time in the base hospital in France, is well covered by this book. Here, to quote again from the introduction, "came not only the successes of the clearing station line, but also some of the failures"; and few who have not had experience of this type of work realize what a tax they made on the resources and surgical judgement of the base hospital staffs.

Had the book appeared at the time the editors intended—the autumn of 1918—it would undoubtedly have had a wide popularity. All the sections are ably dealt with;

[1] *A Manual of War Surgery*. By Colonel Seymour Barling, A.M.S., and Major J. T. Morrison, O.B.E., M.B., F.R.C.S. With an introduction by Major-General Sir George H. Makins, G.C.M.G., C.B., F.R.C.S. London: Henry Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. xvi + 479; 149 figures. 21s. net.)

they are the work, in the main, of young men, and are all the better for that. The section on general wound treatment by J. T. Morrison is excellent, and his conclusions as to the relative value of the various methods of treatment of infected wounds will be endorsed by the majority. He gives some interesting charts and tables of the results of the various methods. A. J. Hutton's section on injuries of the head and spine bears deeply the imprint of Harvey Cushing—as it should. The brief chapter on spinal injuries shows up baldly the poverty of the work that was attempted on these important lesions. This remark casts no aspersions on those who did contribute to the subject, but when one thinks of the monographs and papers which might have been written but were not, it is a sad business. These cases should have been segregated and studied intensively in France on a far larger scale.

It is impossible adequately to outline the scope and value of the various sections. Forbes Fraser's account of the wounds of joints, Barling and Sevestre on wounds of the chest, Burrow's article on tetanus, Hartley and Shore on wounds of bones, are all good; H. C. Bazett writes a synopsis on shock which is much too short.

We can recommend this book to our readers, for whilst no observer of startling brilliance is revealed, it is very sound, and a very fair and reasonable exposition of the type of surgery which it sets out to describe.

MODERN UROLOGY.

THE claims of urology to rank as a specialty have been more fully recognized in America than in England. The treatise in two volumes on *Modern Urology*,[1] under the editorship of Dr. HUGH CABOT, is the outcome of this recognition. It is a composite work to which the most eminent of America's urologists have contributed. Although a similar treatise was compiled in the past by Dr. Prince Morrow, it was not written by genito urinary surgeons, but by general surgeons interested in genito-urinary work. Cabot's book is therefore the first articulate expression of the school of American urology, and as such is a publication of considerable importance.

The task of reviewing a composite work to which many different writers have contributed is in some respects difficult, for although the clinical ability of all of the contributors to the volume be beyond question their success as writers varies. This is a weakness inherent in all such composite works. It is, however, a fault that is not conspicuous in the volume before us. Moreover, the advantages that are derived from the fact that each section has been written by an expert on that particular subject outweigh all other considerations. *Modern Urology* is primarily a book of reference. It is a work to which the genito-urinary surgeon rather than the student will turn. The bibliography scattered throughout its pages will be of great value to him, for it has the merit of being remarkably complete. Completeness is, indeed, the word which best describes the work as a whole. Although America now possesses a school of urology of her own, the American compilers of this book cannot be accused of neglecting work done elsewhere. It should be as well received in Europe as in America.

The book is clearly written and the arrangement good. It is well illustrated and contains a sprinkling of coloured plates. The editor has wisely limited it to urology pure and simple, and has only dealt with syphilis in so far as it affects the genito-urinary system.

THE MAKING OF NECROPSIES.

WE are glad to note the appearance of a second edition of Dr. Box's *Post-mortem Manual*.[2] It is intended as a guide to students and practitioners in the performance of *post-mortem* examinations, and within its small compass is information enough to convert the tiro into a skilled morbid anatomist. To the more experienced it presents a systematic and practical epitome of the subject. After some preliminary remarks on instruments and appliances, in which no necessary instrument is omitted and nothing superfluous added, the author proceeds to a minute examination of the external appearances of the body. This is followed by instructions for the removal of the viscera with indications of the morbid conditions which must be looked for while doing so. Each organ is studied in turn and the pathological appearances are carefully described. The whole body is dealt with in this manner. Morbid histology and bacteriology are outside the scope of the volume, nevertheless useful instructions are given for the collection of material for such investigations. The chapter on *post-mortem* examination of the newly born will prove of the greatest assistance to the practitioner confronted with the necessity of ascertaining the cause of death in an infant, especially where access to larger medico-legal works cannot be had. An excellent summary of the causes of sudden death is also given. A section on embalming and on the restitution of the body completes the volume. The work is marked throughout by thoroughness and attention to practical details. Omissions are hard to find. Indeed, only two examples occur to us. We can find no mention of tuberculous ulcers in the colon, although they are described in the small intestine and caecum; and, under syphilis of the spleen, there is no reference to the splenomegaly which is sometimes present in the tertiary stage of the disease. In matters of technique we think it a pity that the author has followed the common practice of dividing the skin just below the symphysis mentis. With a little care it is quite easy in most cases to remove the tongue and fauces without going higher than the upper border of the thyroid. The deceased's friends can then view the clothed body with no risk that they will be offended by the site of an incision. These are minor points, however, and do not detract from the value of the book. Excellent diagrams and illustrations are given throughout the text. The volume may be thoroughly recommended.

PSYCHOLOGY AND MENTAL DEFICIENCY.

DR. GODDARD, the author of *Psychology of the Normal and Subnormal*,[4] is especially interested in the subject of the feeble-minded, and he is well known as the writer of *The Kallikak Family*, an interesting study in heredity. The present volume is concerned with psychology in its relation to mental deficiency, and though it is written on popular lines it will be found of interest and value to the medical as well as to the lay reader interested in the care and treatment of the feeble-minded. The book is written in a clear and simple style, and in dealing with psychology the writer always keeps in the foreground the practical applications of his subject. Emphasis is throughout laid on the psycho-physical standpoint in describing mental states. There is a certain cheerfulness and vigour about the book which will be found stimulating by those who are working in a sphere which is often difficult and discouraging. This may be indicated by the concluding sentences, which aptly sum up the question of discipline in relation to the feeble-minded: "Treat them as children according to their mental age, constantly encourage and praise, never discourage or scold, and *keep them happy*." In concluding this notice we must confess that, even with the best will in the world, we cannot read such spelling as "thot" for thought without some degree of discomfort; nevertheless this book may be thoroughly recommended to those for whom it is intended.

THE NUTRITION OF THE FOETUS.

WE are pleased to see that Dr. MORRIS SLEMONS has published as a little book the oration which he delivered to the Ontario Medical Association last May upon *The Nutrition of the Foetus*.[5] A brief abstract of his lecture appeared in our Epitome of Current Literature last autumn, but his work deserves the fullest publicity. The subject is one of very real importance, and of interest not

[1] *Modern Urology.* Edited by Hugh Cabot, M.D., F.A.C.S., Chief of the Genito-Urinary Department of the Massachusetts General Hospital. Two volumes. Philadelphia and New York: Lea and Febiger. 1918. (Roy. 8vo; Vol. i, pp. 744, 368 figures, 7 plates; Vol. ii, pp. 708, 264 figures, 10 plates. 14.00 dollars.)

[2] *Post-mortem Manual.* A Handbook of Morbid Anatomy and Post-Mortem Technique. By Charles R. Box, M.D., B.S., B.Sc.Lond., F.R.C.P.Lond., F.R.C.S.Eng. Second edition. London: J. and A. Churchill. 1919. (Cr. 8vo, pp. xi + 372; 22 figures. 8s. 6d. net.)

[4] *Psychology of the Normal and Subnormal.* By Henry Herbert Goddard, A.M., Ph.D., Director Ohio Bureau of Juvenile Research. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1919. (Demy 8vo, pp. xxiv + 349; 48 figures. 25s. net.)

[5] *The Nutrition of the Foetus.* By J. Morris Slemons, M.D. New Haven: Yale University Press. London: Humphry Milford. 1919. (Cr. 8vo. pp. 49. 3s. 6d. net.)

only to the medical profession, but also to all those who, either in an official or in a philanthropic capacity, are connected with the welfare of the future generations.

In view of the abstract mentioned it is unnecessary here to discuss Dr. Slemons's investigations or conclusions, but it is a pleasure to pay a tribute to the simplicity of his writing, which makes his book agreeable to read, and renders a complex subject as clear as crystal. Dr. Slemons's work is the most important contribution to our knowledge of the physiology of the placenta that has appeared for some time, and we earnestly commend it to the attention of the many who are or ought to be interested.

CONSERVANCY IN INDIA.

A Manual of Conservancy,[6] by JAHAR LAL DAS, of Calcutta University, is addressed to those in India who are training to become sanitary officers, and for this purpose it is most excellent. The fact that the book is written by an Indian worker is of the first importance, and amply justifies Dr. BENTLEY'S able introduction, in which he reminds us that our own country was in a bad state from a sanitary point of view only a few decades ago. Dr. Bentley further likens the movement of the Indian people towards improved methods of living to a similar period in our own development.

The author divides his book into four parts. The first deals with scavenging, the second with conservancy proper, and the third with the management of cattle; the fourth part contains a number of appendices. The local hints are invaluable, and the description found in Part III of a good bull is entertaining and possibly reminiscent.

Unfortunately the illustrations are poor, and should further editions be called for the author will do well to replace the present collection.

NURSES' TEXTBOOK OF OPERATIONS.

MR. HEY GROVES is to be congratulated upon his *Surgical Operations: A Textbook for Nurses*.[7] In it we have a book worthy of the nursing profession, a book which credits nurses with intelligence and will satisfy their usually insatiable curiosity. With the generous help of the publishers of the Oxford Medical Publications, of which excellent series this book is one, the author has rendered nurses a real service. The volume is a pleasant size to handle, clearly printed, and extremely well illustrated with large sized figures. The operations described are systematically arranged, and are typical of those performed daily in general hospitals. Operations on the head, neck, breast, thorax, abdomen, and pelvis, as well as amputations, are adequately described. The eye, ear, and nose receive brief attention, the operations for removal of cataract, nasal polypi, tonsils, and adenoids are described as well as the typical mastoid operation and those on the antrum of Highmore and nasal septum. Each section is followed by a note upon the special post-operative care required in each instance. Obviously, in a work of this size, a work which requires above all to be freely illustrated, it is not possible to describe a variety of operations for individual diseases. Thus the "gridiron" incision alone is described for appendicitis, Witzel and Frank's gastrostomes are given preference to Senn's, and so forth. There is a serious omission in the "typical laparotomy set" on p. 16. No mention is there made of intestinal clamps. In this same appendix to Chapter I xylol is referred to as an oil. Further, in the section on "Methods of Sterilization," with reference to the preparation of the hands for operations, there is no mention of the arms. Sleeves are omitted from the routine operation dress, although leggings are included. Those worried by split infinitives will have their sensibilities wounded in this first chapter. Such slips as those mentioned are easily remedied, and in no way detract from the general merits of the book. At the end will be found a most helpful appendix of thirty-six pages where all the ordinary instruments are separately figured and named. There is a satisfactory index.

[6] *A Manual of Conservancy*. By J. L. Das, L.M.S.Cal.Univ. London and India: Butterworth and Co. 1919. (Demy 8vo, pp. xix+189; 44 figures. Rs.5/10.)

[7] *Surgical Operations: A Textbook for Nurses*. By E. W. Hey Groves, M.D., B.Sc., M.S., F.R.C.S. London: Henry Frowde and Hodder and Stoughton. 1919. (Roy. 8vo, pp. viii + 255; 191 figs. 21s. net.)

NOTES ON BOOKS.

THE ninth edition of Professor CHURCH and Dr. PETERSON'S *Nervous and Mental Diseases*[8] appears only twenty years after the first; it is designed for medical students and general practitioners, is written in a simple and straightforward style, and is not overweighted with novelties of theory or the fancies of the Vienna school. The first section by Professor Church deals with nervous disorders and covers over 680 pages; each disease is described with clearness and on the lines commonly followed by writers on neurology. The second section contains an account of mental diseases by Dr. Peterson, and gives an excellent description of the subject, practical and sensible. The book is well printed and turned out.

Lieut.-Colonel O'MEARA'S *Medical Guide for India and Book of Prescriptions*[9] contains a great deal of assorted information on all the many questions that may arise in the daily work of practitioners and medical students in India. The first three hundred pages are given to drugs, prescriptions, and special methods of employing certain remedies; a few pages are devoted to the use of indigenous drugs such as those employed in the Yunani and Ayurvedic methods of treatment, that are said by the author sometimes to be of great use in the hands of Indian physicians. He gives, indeed, an indigenous prescription for impotence that demands the boiling of equal parts of earthworms and half a dozen presumably vegetable drugs in sweet oil, the resultant extract being for local application. The rest of the volume contains a great deal of heterogeneous but serviceable information; foods and feeding, antiseptics, blood pressure, anaphylaxis, pelvic measurements, drug eruptions, microscopic stains, inquests, vaccination, lists of asylums, laboratories, vaccine dépôts, and medical colleges, and fifty others of the things a medical man may want to know about suddenly will here be found set forth. Regarded as the practitioner's "Where's What" it should be of service to medical practitioners in India.

The fact that HARDWICKE'S *Sight Testing made Easy*[10] has reached its fourth edition shows that it meets a demand. The groundwork of the book is subjective testing, and we find in consequence much about the astigmatic fan, the pinhole, and the slit; students nowadays begin their work in the eye department with retinoscopy, and it might be no bad practice for them occasionally to revert to the older methods. Some of the statements in the book are too sweeping; for instance, it is not correct to say that glaucoma is hardly ever met with in the myope, for quite a definite proportion of the cases of glaucoma seen occur in myopes. One or two misprints need correcting, such as "axles" for "axes" on p. 33; while in the first formula on p. 56 the cylinder has been printed *plus* instead of *minus*; the sentence on p. 47 about the liability of a cycloplegic to glaucoma should be rewritten.

Oscar Montague, Paranoiac,[11] by Dr. G. L. WALTON, is a somewhat disappointing attempt to depict in a novel the development of a morbid temperament. The story, which only succeeds in being interesting at intervals, is concerned with the troubles of a family consisting of an alcoholic and scheming father, a psychasthenic mother, Oscar the paranoiac son, and the daughter. We thoroughly sympathize with the dilemma of this bright young lady in regard to the question of heredity when she falls in love, and we are glad that Dr. Reynolds, whom she consulted, gave her such sensible advice. Singularly enough, in view of the title, Oscar is only a secondary character, and it is the trouble he causes others, rather than the study of his mental development, that furnishes most of the material for the story. Many of the characters are unimportant, but the personality of the doctor is attractive; and from the advice he gives to his patients we suspect him of being able to write excellent popular medical books for nervous invalids of the same kind as "Why Worry" and "Those Nerves." Dr. Walton has already earned a reputation as the author of these books, but this novel suggests that he is not equally at home in the domain of fiction.

[8] *Nervous and Mental Diseases*. By Archibald Church, M.D., and Frederick Peterson, M.D. Ninth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co. 1919. (Roy. 8vo, pp. 949; 350 figures. 30s. net.)

[9] *Medical Guide for India and Book of Prescriptions*. By Lieut.-Colonel E. J. O'Meara, O.B.E., F.R.C.S.Eng., D.P.H.Camb., Civil Surgeon and Principal of the Medical School, Agra. Calcutta: Butterworth and Co. (India), Ltd. London: Butterworth and Co. 1920. (Demy 8vo, pp. vii + 717. Rs. 12 net.)

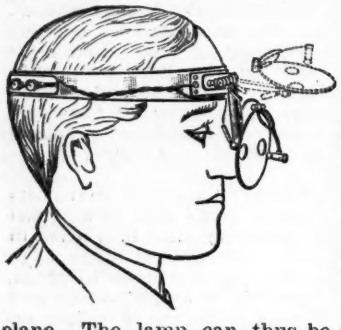
[10] *Sight Testing made Easy*. By W. Wright Hardwicke, M.D. Fourth edition. London: J. and A. Churchill. 1920. (Cr. 8vo, pp. viii + 79; 12 figures. 5s. net.)

[11] *Oscar Montague, Paranoiac*. By George Lincoln Walton. Philadelphia and London: J. B. Lippincott Co. 1919. (Post 8vo, pp. 304; frontispiece. 6s. net.)

APPLIANCES AND PREPARATIONS.

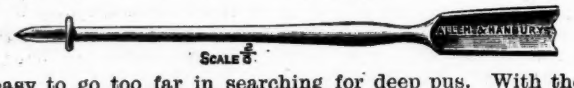
A Head Lamp.

MR. GILBERT CHUBB, F.R.C.S.Eng., Assistant Surgeon Throat Hospital, Golden Square, has devised a head lamp on the well known Klar principle, but with a reflector of speculum metal, so that it cannot break, and of sufficiently small size to allow of very useful peripheral vision when in place. The eyeholes are very large and placed on the converging lines for near binocular vision. The reflector is attached to a rigid headband by an arm with an adjustable hinge at either end, permitting of movement only in the sagittal plane. The lamp can thus be adjusted before washing up, and then brought down into place, or pushed away from the face, with a mop. An automatic switch cuts off the current when the reflector is out of use, thus enabling it to be used off a pocket battery without waste. The front part of the head-band is sloped back through 15 degrees, so that it lies flat on the forehead, and permits of the lamp being worn for long periods without discomfort. Mr. Chubb has found the lamp useful not only for ear, nose, and throat work, but also for many operations in general surgery where the general illumination available was insufficient. The lamp is made by Messrs. Mayer and Phelps.



A Tonsil Bayonet.

Mr. A. SCOTT GILLETT, F.R.C.S.Edin. (London, W.), writes: In opening peritonsillar abscesses it is usual to employ either a small scalpel guarded with strapping, or unguarded forceps. When employing the former method it is difficult to sterilize the strapping; in the latter it is easy to go too far in searching for deep pus. With the idea of overcoming these two disadvantages Messrs. Allen and Hanburys have made for me the instrument here figured. The following advantages are claimed: (1) Ease of sterilization; (2) the presence of a collar, which prevents the operator stabbing too deeply; (3) the double-edged bayonet which facilitates the conversion of the stab into an incision in either an upward or downward direction. The operation can then be completed with blunt forceps quite safely. Messrs. Allen and Hanburys are the makers of the instrument.



Anti-Vermin Paste.

We have received from Captain C. G. MOOR, R.A.M.C.T., of the 1st London Sanitary Company, a sample of the anti-vermin paste which he devised in France towards the close of the war. Captain Moor is part author of an excellent little handbook on *Field Sanitation*, reviewed in our issue of February 9th, 1918, p. 177. His preparation was tested privately among their men by various medical officers, who reported very favourably on its effect both in destroying lice and preventing their approach. The novelty of this preparation lies in the fact that the active ingredient, naphthaline, is combined with the ointment, so that the user is constantly clothed in the vapour of naphthaline. In theory, at least, the British army is now free from body vermin, but in the terrible conditions of Eastern Europe louse-borne diseases (typhus and relapsing fever in particular) are rife, and there is therefore still a large field for anti-vermin measures. This paste is manufactured commercially by the Sanitas Company, Ltd., Locksley Street, Limehouse, E. It is sold in tins at 9d.

THE Faculty of Medicine of Liége University has arranged a vacation course in various branches of medicine, surgery, and obstetrics, from March 29th to April 10th.

THE activities of the Italian Section of the International Association "Pneumothorax artificialis," suspended during the war, have been resumed. It is now inviting the enrolment of new members, who should communicate with Professor U. Carpi of Lugaro. The Association proposes to revive the international review, *Pneumothorax Thérapeutique*, which, under the direction of Carlo Fortanini, contained a collection of the world's literature on artificial pneumothorax.

THE MENTALLY DEFECTIVE AND THE UNSTABLE BROUGHT BEFORE THE COURTS:

*THE BIRMINGHAM SCHEME.**

BY

W. A. POTTS, M.A., M.D.,

MEDICAL OFFICER TO THE BIRMINGHAM COMMITTEE FOR THE CARE OF THE MENTALLY DEFECTIVE; PSYCHOLOGICAL EXPERT TO THE BIRMINGHAM JUSTICES.

IN considering this problem it is necessary to mention two outstanding facts of criminology. The first is that in England it was found recently that out of 168,260 convictions, 104,171, or 62 per cent., of the persons convicted had received at least one previous conviction, while 12,133, or over 7 per cent., had been convicted about twenty times previously; of the 11,000 odd convictions for more serious offences tried at the assizes and quarter sessions, 70 per cent. had been previously convicted. The other fundamental fact is that "practically all confirmed criminals begin their careers in childhood or early life." The late Dr. Goring proved that between 15 and 20 is the age for recruiting into the criminal classes.

These facts show that prison is not a remedy for this social disease. It can scarcely be expected that imprisonment would do much good, because, at the best, prison means discipline without training, and takes no account of the initial cause of wrong-doing. If by chance the cause is discovered, no steps are taken as a rule to deal with it; for justice, as we call it, can only deal with the offence for which the prisoner is charged, and therefore does not punish him for his initial fault, which is frequently something quite different from the charge the court is considering. For instance, women who are charged with petty thefts are often inebriates; to punish them for stealing does no good; in fact, it makes them worse. Dealing with them satisfactorily as inebriates would cure their drinking habits, and their thieving propensities would then right themselves. Some people steal because they are lazy and play truant from work, but stealing is not the fundamental fault. Punishment for stealing, therefore, only makes them more degenerate, especially as it develops an anti-social grudge. Dealing with the laziness by medical treatment, if it is due to constitutional disease or weakness, or by a labour colony and training in high ideals if it is a moral weakness, might effect some good. Frequently lying is the fundamental cause of going wrong, and is the fault that should be punished, or rather dealt with.

The investigations of the Royal Commission on the Care and Control of the Feeble-minded, and many other investigations, have shown that a considerable proportion of prisoners—a percentage varying from 10 to 30—are mentally defective, and should be dealt with as such, and not as criminals. Careful examination will show that physical illness and incapacity are the cause in another large percentage of cases. In addition to this there are, as frequent causes, wrong occupations, want of training for any occupation, bad homes, and alcoholism. It might be objected that alcoholism has no place in the production of criminals, as most are developed at 16 or 18 years of age; hereditary weakness, however, is often seen in children of alcoholic parents, while bad homes are more often due to drink than any other single cause. Venereal disease is important. Sometimes it poisons the mentality, and is a cause of crime, or at least a contributory factor. Whether it is the cause of crime or not, many prisoners will be found to be infected; their disease should be treated. This is not always done, sometimes because the disease is not diagnosed, but more often because the term in prison is too short for effective treatment. Often the presence of such disease untreated is only another sign of mental defect. The National Council for Combating Venereal Disease finds mental defectives one of its great difficulties; such persons often spread disease broadcast. In them untreated venereal disease should be accepted as a proof of "neglect," thereby bringing them under the Mental Deficiency Act (1913). There would seem to be no reason

* Being a paper read at a Conference on the Administration of the Mental Deficiency Act, 1913, in the Church House, Westminster, in November, 1919.

why this should not be done, but it would be well to amend the Act to this effect.

Some of the disabilities I have described are dealt with by the Borstal system, the Probation of Offenders Act, and the Children's Court, but all these will fail time after time if there is no scientific investigation into the real cause of the crime. This has been recognized for several years by the Birmingham justices, who have realized that many mental defectives must have passed unnoticed through the courts. More recently these justices became concerned at the prospect of the discharge of a number of soldiers suffering from shell shock, and the probable effect of alcohol on them and other weaklings when released from the strict discipline of the army. The Birmingham justices decided to initiate a scheme which will probably be taken as a model for the administration of justice all over the country.

The essential feature of the Birmingham scheme is that every prisoner in whose case there is any possibility of such an explanation of the crime as I have suggested, or who in any other way is unlikely to be benefited by imprisonment or fine, should be examined by an expert medical investigator, either before or after conviction, but in any case before sentence is passed. The report of this investigator is taken into consideration before sentence. In a number of cases the prisoner is placed on probation and the treatment suggested by the medical investigator made a condition of the probation. The Probation of Offenders Act has given great power to the justices; if wisely used in this way, great benefit will follow. Many cases are found to be mentally defective; this was so with three out of the first sixteen dealt with, although the Mental Deficiency Act was already being energetically administered in Birmingham; such cases are handed over to the Committee for the Care of the Mentally Defective, which usually deals with them by placing them in a suitable institution. It has been realized that without additional legislation, but merely by making proper use of the Mental Deficiency Act, much good can be accomplished. An important part of the scheme is the provision of a staff of wise and sympathetic probation officers; much depends on them.

It is not possible to find the real cause by any investigation in court. One often hears magistrates asking a prisoner what is the reason of his going wrong; in a public court it is very unlikely that the prisoner will state what is the cause even if he realizes it himself. In the majority of cases the cause can only be elicited after long and careful examination and a private interview. The springs of conduct are in the subconscious mind, and therefore often unsuspected by the individual himself; their discovery requires experience in mental analysis. Psychotherapy is often an important agent in effecting a cure. If only a proper investigation were carried out, the scandal would be avoided of the extraordinary police court notices to be seen in the paper every week, such as the statement that a boy of 9 was a confirmed criminal, and should be treated as such. Anyone who has studied the subject must know that the boy was either a moral defective to be dealt with under the Mental Deficiency Act, or else had never had a chance, and that if anyone required punishment it was not the boy but his parents. Recently the chairman of one bench said a girl of 16 "was well on the downward path, and the best place for her was prison." This was said after the probation officer had stated that "the girl had been in three homes, and had made a farce of probation arrangements." I cannot help thinking it might have been more correct to say that the court had made a farce of examining the girl, the probation arrangements having been made without any scientific investigation of the girl and her circumstances.

To make their scheme more effective the Birmingham justices induced the Home Office to appoint at the prison, instead of a part-time, a whole-time medical officer with a special knowledge of insanity and mental defect. This ensures cases overlooked before going to prison being recognized while under treatment. The justices have arranged as a matter of practical working that their medical officer shall be responsible for the examination and treatment of all cases outside the prison, while the prison medical officer shall be responsible for all those inside the prison, and that those two officers shall, whenever possible, work together, each calling in the other if he wishes the help of a colleague in coming to a decision. Everything I have described so far has been arranged and carried out in Birmingham without any additional legislation. The Birmingham justices are by no means satisfied even with this great improvement, but have extended their scheme so that a portion of the prison infirmary will be converted into a mental hospital, where special cases can be treated on the recommendation of either of the medical men engaged in this work. The prison medical officer is responsible for the treatment of all cases inside this hospital, but the medical adviser to the justices will have the right of entry and making suggestions in regard to all cases in which he is interested. This hospital will be outside the prison wall, and the stigma of prison will be eliminated. This scheme is on the right lines. As a medical man engaged in this work I may say that the only difficulty I have had so far is that some magistrates do not seem to realize in what a large percentage of cases special medical examination is desirable, if not absolutely necessary. So far no case has ever been put before me in which the proceedings can be regarded in any way as a waste of time. There is no doubt that it will turn out to be, in the long run, one of the most economical proceedings ever devised. If the enormous cost to the community be realized of one lifelong criminal and the degenerate descendants he or she may have in a few generations, it will be recognized that the expenditure of a pound or two at the outset may save the country thousands of pounds in the end.

The most important question is how magistrates are to recognize prisoners who ought to be referred for special examination. The cases that most urgently require dealing with in this way are those not understood and cases where the crime is of an unusual nature. There are many mental defectives in addition to those who are obviously mentally defective. A girl or young woman may be feeble-minded, although she smiles pleasantly and answers ordinary questions in an ordinary way. Sometimes mental defect is exhibited by lack of attention and interest in the proceedings in court. It is often shown by frequent change of situation and inability to earn a living wage for any length of time. Placing obstructions on a railway and incendiarism when there is nothing to gain from insurance always suggest the possibility of mental defect, and so should gross sexual offences. The physical conditions that should be referred for examination include all those that look ill. Serious defects of vision and speech are often precursors of crime, and so are severe headaches, which always require investigation. Puzzling cases, where there is no obvious reason for the crime, should be referred; in many of them surprisingly good results can be obtained if the prisoner is approached in the right way, thoroughly examined, and properly treated. By modern methods of investigation we can see the inner workings of the mind. Mental analysis and psycho-therapy have untold possibilities in many cases. Much can be accomplished by probation continued for a sufficient length of time under proper conditions.

In Birmingham we have been administering the Mental Deficiency Act (1913) for over five years. But of the first 16 cases specially examined for the justices, 6, or 37 per cent., were not responsible; 3, or 18 per cent., were not fully responsible; one was a doubtful case, and the remaining 6, or 37 per cent., although responsible, were entitled to special consideration owing to circumstances connected with their health, homes, occupations, or lack of training in anything good. Yet almost everywhere except in Birmingham these cases are still dealt with in the ordinary way. One young man convicted of stealing was found to be suffering from consumption which was poisoning his mentality; instead of being sent to prison he was, through the assistance of the medical officer of health, placed in a sanatorium. At the end of three months he was able to go home again, and was fortunate enough to obtain light work instead of the laborious and injurious occupation in which he had previously been engaged. He has now been at home several months, working well, and his conduct has been satisfactory in every way. Of the cases dealt with so far more than 18 per cent. have been found to be mentally defective, and have been dealt with under the Mental Deficiency Act, while over 12 per cent. have been of unsound mind and therefore equally irresponsible. Treatment under the Mental Deficiency Act involves considerable expense at first, but this is nothing compared with the amount incurred in keeping up large numbers of prisons, refuge homes, maternity homes, infirmaries, etc.

One man who came before the court was found to be suffering from shell shock, and was taken in charge by the military authorities, who placed him in a suitable hospital for treatment. Several other cases have been dealt with in a common-sense manner.

In order that a scheme such as that followed in Birmingham may be successful, it is essential to have an investigator who has some knowledge of mental defect, insanity, and psychotherapy. Above all he must be interested in the early signs of mental disease and not one who says there is no proof of mental disease till murder, suicide, or some other serious crime has been committed.

To show that the Birmingham scheme by no means encourages malingering or fails to set a proper example, I may cite the following case:

A young girl in regard to whom I reported to the magistrates that she was in poor physical health, and was also mentally dull and backward, although not actually mentally defective. In consequence of this disability she was entitled to all the consideration the court could give her. At the same time I stated that she was a member of a big family, and lived in a bad neighbourhood in the centre of the town; also, that one member of the family had already got into trouble. It seemed unlikely, therefore, that probation would be a suitable way of dealing with the case. The offence of stealing was a serious one, and had taken place in a large and important institution, where it was necessary to set an example. The magistrates devoted a great deal of time and consideration to the case, and asked me whether it would be more beneficial to the girl's physical and mental health to have the strict discipline and training of a special institution or to go home and live more or less undisciplined in the centre of a town. My opinion was that an institution would act better in her interest, especially as, having been dismissed from her employment, it was essential that she should be trained for some new occupation. In these circumstances the magistrates sent her for three years to a reformatory school.

The number of cases dealt with up to the present time is so small that I cannot give all the statistics and confirmation of the wisdom of the scheme I should like, but I feel justified in saying that every single case has been an object lesson in the value and necessity of work on these lines.

RETAIL PRICES OF DRUGS.

THE Standing Committee for the Investigation of Prices under the Profiteering Act, 1919, appointed a subcommittee some time ago to investigate prices, costs, and profits, at all stages, of drugs and medicinal tablets and preparations, proprietary and otherwise. The subcommittee, of which Dr. C. O. Hawthorne is the medical member, has recently presented an interim report,* in which it describes the system of production and distribution under which at the present day drugs and medicinal preparations are provided and supplied for the public use.

Wholesale and Retail Druggists.

From evidence taken by the subcommittee it appeared that drugs and medicinal preparations are in Great Britain mainly distributed by some 10,000 retail pharmacists; in addition, some of the stores in many large towns include a retail pharmacy in their organization. There are altogether 20,000 persons other than pharmacists licensed to sell "patent" medicines. Some manufacturers sell only or mainly to wholesale druggists, others also sell direct to retail pharmacists; there are also wholesale druggists who own retail shops. The business of a retail pharmacist, it is said, is in certain respects exceptional; the turnover, for instance, both in gross and in detail, is of very small monetary value and the business stock very varied in character. The subcommittee considers, therefore, that such a business cannot be treated, as regards rate of profit, on the same trade basis as businesses with a large turnover confined to comparatively few articles.

The methods of business adopted by the manufacturing firms are found to be different; some of them spend large sums in advertising; the public demand thus created compels the pharmacist to stock the articles, even though the percentage of profit allowed on them is small. Some firms spend little in propaganda, but indicate to the public selling prices which allow a relatively large percentage of profit to the retailers, and in return expect to be rewarded by a relatively large amount of preferential pushing of their products by the retailers. Other firms, still in an early stage, not only spend large sums on propaganda, with a view to securing a public demand for them, but also fix a selling price to the public which allows both wholesaler and retailer a comparatively large profit.

A Proprietary Articles Trade Association was formed in 1896, with the object of protecting the small retail pharmacist against price-cutting by the stores and others. This association now consists of three sections—proprietors, wholesale distributors, and retail distributors. Some 310 firms owning proprietary articles are members. It is governed by a council consisting of 36 members, equally divided between manufacturers, wholesalers, and retailers. It exercises control over the price of practically 3,000 proprietary articles sold by 310 manufacturing or owning firms and retailed by 20,000 or 30,000 retailers. It determines a fair rate of profit, which is usually (in terms of selling price) 12½ per cent. to the wholesaler and 25 per cent. to the retailer. Price-cutting is avoided by an agreement that any person selling any article on this association's list at a price lower than that fixed by it may be refused a supply of all articles included in the list. Without such a protective arrangement, it is said, the profit on many of the articles would probably be so small that the retailer would be disinclined to deal in them.

Aspirin (Acetylsalicylic Acid).

The subcommittee gave attention first to the cost of manufacturing and the selling price of aspirin and aspirin tablets. "Aspirin" is one of several trade names for acetylsalicylic acid, and before the war the name was the exclusive property of the Bayer Company, of Elberfeld, Germany, and could be applied only to the acetylsalicylic acid manufactured by that firm. After the outbreak of war certain British manufacturers began experiments, and during 1915 and 1916 several of them succeeded in manufacturing acetylsalicylic acid on a commercial scale. The German trade-mark having lapsed, British-made acetylsalicylic acid was placed on the market under various names, of which "aspirin" is the best known, and the subcommittee uses this term as the synonym for acetylsalicylic acid under whatever name it is sold. It is suggested that at the first opportunity the term should be included in the *British Pharmacopoeia* as a synonym for acetylsalicylic acid, which is already included. At present there is no official or pharmacopoeial definition of aspirin. Before the war the price of acetylsalicylic acid in bulk was about 2s. a lb., but the price of the Bayer aspirin was about 18s. a lb., less various discounts. After the outbreak of war the price of what was then being sold variously as aspirin or acetylsalicylic acid began to rise until in 1916 the price exceeded 40s. a lb. It afterwards declined until during 1919 the price in bulk ranged from 3s. 10d. to 4s. 6d. a lb.

One pound of aspirin represents approximately 1,400 tablets of 5 grains each. In 1914 a bottle containing 25 such tablets made of Bayer aspirin was sold retail at from 10d. to 1s. 3d., if containing tablets of acetylsalicylic acid at prices from 4½d. to 9d. In 1919 the retail price of a bottle containing 25 such tablets of acetylsalicylic acid, sold as aspirin, or under some similar name, varied from 5½d. to 1s. or thereabouts. The Government laboratory has ascertained that there is no substantial difference, either physical or chemical, between some seven aspirin tablets now on sale to the public, and that certain of the less expensive tablets are in no way inferior to their more expensive rivals.

The subcommittee concludes that under present conditions aspirin tablets made from acetylsalicylic acid answering the tests of the *British Pharmacopoeia* can, when working with large quantities, be manufactured and sold by the manufacturer with a reasonable profit at 5s. 6d. a dozen screw-capped bottles of 25 five-grain tablets in each bottle. It is stated that such bottles can at present be purchased by the public at certain shops at about 6d. each, a price which leaves a very narrow margin of profit to the retail pharmacist. The subcommittee finds, on the other hand, that the retail price of 1s. and upwards for 25 tablets, at which certain brands of aspirin are sold, is excessive in relation to the cost and manufacture, even when allowance is made for charges incurred in advertising and other methods of publicity. It is, however, of opinion that the present range of prices, when allowance is made for increased cost of labour, packing materials, etc., is not appreciably

*[Cmd. 633.] Price 1d.

different from that prevailing before the war. The opinion is expressed that when aspirin is sold at 10d. a bottle of 25 five-grain tablets the price, if properly apportioned, should give reasonable profit to the manufacturer, the wholesaler, and the retailer. The question of the possible promotion of a habit of self-drugging as the result of the cheapening of the price of aspirin was raised by one of the witnesses, but was not considered to come within the reference to the subcommittee. It is noted, however, that while on some packages the labels imply that the tablets should be taken only under medical direction, there are others on which no such limitation is mentioned, and it is even suggested that as many as twelve five-grain tablets may be taken daily and apparently for an unlimited period. It is pointed out that aspirin is sold by others than retail pharmacists and that the purchaser is free to obtain whatever quantity he desires.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE FRIENDLY SOCIETY.

THE thirty-seventh annual general meeting of the Society was held at 11, Chandos Street, W., on March 26th.

DR. F. J. ALLAN, chairman of the Executive Committee, who was in the chair, said that during the past year the society had begun to get some of the business which, through the absence of many men at the front and the decline in the number qualifying, had fallen off during the war years. The number of new proposals was 305 as against 84 in the previous year, and in the current year up to the present time more than half the number received in 1919 had been received. During the past year 25 women practitioners had been admitted; it had been stipulated that if the rates charged for them proved inadequate they would have to be revised. After taking account of the deaths and resignations, the actual number of members on the society's books at the end of 1919 was 3,351. The society had disbursed in sickness and accident benefits £19,000 in 1919, as against £20,000 in the previous year. The sickness and accident funds had increased with the increased premiums, and the sickness claims were considerably below the expectation. Notwithstanding the fact that all the lives insured were practically picked lives, 25 per cent. of the total number of members claimed benefits during the year. There were 99 members on the list and the annuity fund. The life insurance fund continued to grow slowly, but the limitation of the amount of insurance to £300 did not afford much scope. The investments now yielded £4 13s. per cent. as against £4 8s. The society had suffered a great loss in the death of Dr. Caley, a very attentive member of the committee, who had greatly assisted in its deliberations. Dr. Biggs, who was retiring from public work, had resigned his membership. The management expenses of the society were going up, since practically everything cost more, and higher salaries had been given to the staff in view of the increased cost of living.

In reply to inquiries, the CHAIRMAN said that the 25 per cent. of sickness experience included twenty-two cases which were on the fund for the whole year. Excluding these cases, the average duration of illness was five weeks and one day. In 1912 it was four weeks and four days, but that probably included those who were on for the whole year; the comparison was therefore with seven weeks in the past year; in 1913 it was five weeks.

The report was adopted, and the Executive Committee and the auditor were appointed.

The meeting then resolved itself into an extraordinary general meeting.

DR. ALLAN said that the matter of the conversion of the society into a mutual company had been considered by the committee for many years, and had been discussed at a general meeting. The society continually received complaints from members that they were unable to insure for larger amounts than those allowed under the Friendly Society Acts. The limitation was considered to be the reason why the society only had a little over 3,000 members. The fact must be faced that if the society became a mutual company an increased amount would have to be paid in income tax. The committee, however, had come to the conclusion that the increase in business that would ensue would amply cover any expenditure on that score. It was anticipated that increase in the insurances would not cause any material increase in the clerical work, since it would be as easy to prepare a policy for £1,000 as for £300. Proposals for larger insurances were waiting to be carried through if it was decided to dissolve the present society and establish a mutual company. He formally moved the following resolution:

(1) The name of the company is the Medical Sickness, Annuity, and Life Assurance Society, Limited. (2) The registered office of the company will be situated in England. (3) The objects for which the company is established are the payment of sums during sickness or disablement, the payment of annuities, and the effecting of life assurances. (4) The liability of the members is limited. (5) Every member of the company undertakes to contribute to the assets of the company, in the event of its being wound up while he is a member or within one year afterwards, for payment of the debts and liabilities of the company contracted before he ceases to be a member, and the costs, damages, and expenses of winding up, and for the adjustment of the rights of the contributories among themselves, such amount as may be required not exceeding two guineas. (6) The articles of association submitted to this meeting and signed by seven subscribers be adopted as articles of association of the company.

In reply to inquiries the CHAIRMAN said that the income tax to be paid if the conversion was carried out would amount to about £2,400. If any members did not propose to join the new company their interests in the Society would be safeguarded by earmarking the amount from the various funds which the actuary might consider necessary to meet all such claims.

The motion was then put to the meeting, and carried by the requisite three-fourths majority. The resolution will be submitted for confirmation to a further general meeting to be held on April 16th.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY, LIMITED

THE annual general meeting of the London and Counties Medical Protection Society, Limited, was held at 32, Craven Street, W.C., on March 17th, with Sir JOHN ROSE BRADFORD, the President, in the chair. The Council's annual report showed that there had been a considerable accession of new members, and that most of those who had resigned temporarily, while away on military service, had resumed their membership. The results of the law suits undertaken by the society for its members had again been, in general, very satisfactory. Many difficulties and disputes had been successfully dealt with, including numerous troubles arising out of panel practice, thus avoiding much litigation and publicity.

Sir JOHN ROSE BRADFORD said that the membership of the society at the end of the year was 5,688, and the net increase during 1919 was just over 500. The funds also had increased to such an extent that the treasurer could look on the prospect of litigation with some equanimity.

Dr. C. M. FEGEN, the treasurer, said that the society, like other bodies, was faced with greatly increased expenditures which diminished the balance on its profit and loss account, and there was also a net depreciation in the value of its securities amounting to £800. This depreciation, however, in no way interfered with the society's income, and, as the investments were all gilt-edged, their ultimate value would remain unchanged. As a whole, the finances were extremely good. The reserve funds had risen during the last twenty years from £1,400 to £25,800, and that period had included five years of war. Litigation during the past year had been normal, but there was in evidence at the present time a spirit of litigation, so that the liabilities of the society could not be exactly foretold.

A resolution to remunerate the members of the committee by a sum of one guinea for each attendance was proposed by Dr. VINRACE and carried *nemine contradicente*. It was stated that this would only mean, supposing every committeeman made a perfect series of attendances, an expenditure of £450 a year, and that this could not be considered an unreasonable charge for the management of a concern with a capital of nearly £26,000.

Sir John Rose Bradford was re-elected President, on the motion of Dr. FEGEN, seconded by Sir T. W. PARKINSON, and Dr. Fegen was re-elected treasurer, on the motion of Dr. J. H. STOWERS, who coupled with his proposition a hearty vote of thanks to Dr. Owen Fowler for taking over the duties of the treasurership during Dr. Fegen's absence on war service. The vice-presidents and retiring members of council were also re-elected, as were the general and financial secretaries, Dr. Hugh Woods and Mr. A. G. R. Foulerton respectively.

VILLAGE TUBERCULOSIS SETTLEMENTS.

DEPUTATION TO THE MINISTER OF HEALTH.

A DEPUTATION recently waited on the Minister of Health to urge the establishment of village settlements in connexion with the treatment of tuberculous ex-soldiers. The establishment of such settlements was recommended in the recent Report of the Interdepartmental Committee on Tuberculosis (Sanatoriums for Soldiers).

The deputation comprised Sir C. A. Montague Barlow, M.P. (Deputy Chairman of the Interdepartmental Committee), Lieut.-Colonel Nathan Raw, M.D., M.P. (who was a member of the Committee), Professor Sir German Sims Woodhead, M.D., Dr. Varrier Jones and Mrs. Marcus Dimsdale (representatives of the Papworth Tuberculosis Colony), and the Countess of Leicester and Mr. Raikes (representatives of the Norfolk Branch of the British Red Cross Society). Dr. Addison was accompanied by Lord Astor (Parliamentary Secretary to the Ministry of Health), Sir George Newman (Chief Medical Officer), and other officials of the Ministry.

The case for the establishment of village settlements put before the Minister was broadly that sanatorium treatment for tuberculosis, even where accompanied by training in a suitable occupation, had been found to be inadequate as a means of combating the disease. The general experience had been that patients who returned from a sanatorium to their homes and former occupations were unable permanently to earn a living or maintain their health. The interest, both of the patients and of the community, required that patients should pass through a threefold course: first of sanatorium treatment, secondly of training, and thirdly of permanent settlement in suitable surroundings. The village settlement should be a natural development of the sanatorium and training colony, and the patient should be in a position to look forward to being able, on completion of his course of treatment and training, to take up his permanent residence in a settlement where, still in close touch with the sanatorium, he could work under conditions which would enable him to maintain his health and have his family or dependants with him. In the settlement the patient and his family would have to be housed, the necessary workshops and other buildings would have to be provided, and—in the case of the civilian—the patient's earnings would have to be supplemented; but the community would gain in the result by the prevention of the spread of infection and the fact that the tuberculosis patient would remain a productive worker. As illustrating the results of establishing a village settlement on these lines, it was stated that at the Cambridgeshire Tuberculosis Colony, out of thirty cases who had passed from sanatorium treatment and training into the settlement there, not one had died in four years.

Dr. ADDISON, in replying, referred to the four main recommendations in the Report of the Interdepartmental Committee, namely:

1. That an increased capital grant should be given for the provision of sanatoriums;
2. That additional sanatorium accommodation for ex-soldiers should be provided;
3. That increased provision should be made for training; and
4. That village settlements should be established.

As regards (1), the capital grant had now been increased from £90 to £180 per bed (subject to a limit of three-fifths of total cost). With regard to (2), since the issue of the committee's report 7,000 additional beds had been provided or were now in course of being provided, largely as a result of the announcement of the increased capital grant. As regards (3), negotiations were proceeding with the authorities of a number of suitable sanatoriums for the rapid provision of training facilities for 1,000 tuberculous ex-service men at an estimated total cost of £250,000. On the question of village settlements, Dr. Addison assured the deputation of his goodwill. There were, however, various difficulties to be overcome. The success of a village settlement would depend even more upon the personality of the man in charge than upon the material provision made. As regards finance, the provision of ten settlements for not less than 200 patients each, as proposed by the Interdepartmental Committee, would, he considered, cost much more than the sum of £1,000,000 suggested by the committee. Again, as Minister of Health he could not consider only the case of the ex-soldier; he had to consider also the civilian population, who had no pensions to supplement their earnings. Further, the Cambridgeshire Tuberculosis Colony was managed by a voluntary organization, but in the establishment of further settlements it would be necessary to rely in the main upon local authorities. The problem was therefore one of much complexity; but a comprehensive scheme, dealing with all the various issues involved, was under discussion with the Treasury. There was, in addition, the important question of the situation of the projected settlements. On this Dr. Addison intimated that Dr. Nathan Raw and Dr. Varrier Jones had kindly consented to undertake, in conjunction with a medical officer of the Ministry, a series of local investigations with a view to advising him on this matter.

NEW STAFF OF OUTDOOR MEDICAL OFFICERS OF THE MINISTRY OF HEALTH.

IN connexion with the appointments of Medical Officers of the Ministry of Health announced in our columns on March 20th (p. 407), it was stated that the Minister of Health was setting up a committee to consider the applications for these appointments and to make recommendations to him of candidates suitable for appointment. We are informed that the committee includes representative medical men of high standing in the profession from different parts of the country (one of whom is chairman, and one nominated by the Civil Service Commissioners), with two representatives of the Ministry. The personnel of the committee will be announced at a later date, but we are requested to state that it is considered desirable for obvious reasons to defer making the names public until after the committee has made its recommendations.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on March 9th 23 cases were considered, and £224 voted to 21 of the applicants. The following is a summary of some of the cases relieved:

Daughter, aged 50, of M.R.C.S.Eng. who died in 1915. Her only income is £40 as a daily governess, and £10 from her sister. She pays £9 2s. a year for one unfurnished room. Voted £5.

Daughter, aged 64, of F.R.C.S.Eng. who died in 1887. Only income 10s. a week by gardening. Lives with an old aunt, who provides for her. Asks for help owing to age, ill health, and the high cost of living. Voted £12 in twelve instalments.

Widow, aged 40, of M.B.Lond. who died in 1918. Was left unprovided for with three children, aged 5½, 4, and 2. Income £60 a year from dividends, and £65 from letting rooms. Pays £39 for rent and rates. Relieved twice, £20. Voted £16 in two instalments.

L.R.C.P. and S.Edin., aged 73, suffers from ill health, and his practice has fallen off since the war. Has lost an annuity of £108 owing to the war. Receives about £103 from practice, and £10 an annuity. Has one daughter, who helps at home; his wife has bad health. Rent £35. Relieved once, £10. Voted £10.

Widow, aged 66, of M.D.Edin. who died in 1909. Was left with four children, one now married. Children pay £78, and she receives £12 from another charity. Pays £1 a week for lodgings, and 2s. 6d. for storing furniture. Relieved eleven times, £116. Voted £12 in twelve instalments.

Daughter, aged 56, of M.R.C.S.Eng. who died in 1895. Was left entirely without means. She receives 17s. a year from a small sum invested, and £21 from another charity. Pays £1 1s. a week for board and lodging. Is in ill health and unable to work. Relieved seven times, £87. Voted £12 in twelve instalments.

Daughter, aged 58, of M.R.C.S.Eng. who died in 1880. She lives with widowed sister, and her only income is £60 from other charities. Has very bad health. Relieved ten times, £108. Voted £12 in twelve instalments.

Widow, aged 49, of M.B.Glasg. who died in 1914. Takes in paying guests, by which she makes about £100 a year. Has two daughters, both at boarding school. Income spent in repairing and redecorating house, previous to letting it. Rent and rates, £57. Relieved twice, £22. Voted £12.

Subscriptions should be sent to the Honorary Treasurer, Sir Charters J. Symonds, C.B., F.R.C.S., at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who, in happier times, would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

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DEFICIENCY DISEASES IN VIENNA.

SOME account was given last November of the early work of the mission sent to Vienna by the Accessory Food Factors Committee appointed jointly by the Lister Institute and the Medical Research Committee. The members, Dr. Harriette Chick and Miss Dalyell, have found the opportunities afforded to them very large, and have, in fact, been embarrassed by their number and variety. The mission has recently been reinforced by Miss Margaret Hume, who arrived in Vienna in February. The mission was instructed to inquire into the prevalence of scurvy, rickets, and other disorders attributable to malnutrition; to study the dietaries, and to ascertain, in the case of children, the value of methods of curing deficiency diseases which have been found effective in experiments on animals. It has concerned itself chiefly with the study of scurvy, rickets, and osteomalacia. An outbreak of infantile scurvy occurred during October and November, 1919, and the mission had the opportunity of treating several cases in the infant ward under the charge of Professor von Pirquet. A variety of substances found by experiment on animals to be the most potent antiscorbutics were added to the diet, and the results were gratifying, cures being more rapid and more complete than those usually obtained in the clinic and other hospitals where the use of raw milk was the routine method. The outbreak was ascribed to the disorganization of milk transport and repeated heating of the milk during the hot weather of September and October. Inquiries showed that outbreaks had previously occurred during the spring and summer. The very complete records kept at Professor von Pirquet's clinic justified the conclusion that, except for six or eight weeks immediately preceding the outbreak of scurvy, the proportion of antiscorbutic material in the raw diet was adequate, and that the occurrence of scurvy was to be attributed to the excessive cooking of vegetables customary in Vienna. The interesting observation is recorded that some under-nourished children immediately began to grow at an abnormal rate when they were supplied with a diet containing an adequate energy value, and that this rapid growth seemed to precipitate the onset of scurvy. The question of the relation of active growth to special vitamine requirement is to receive attention.

In a central children's home containing 500 infants, in many cases accompanied by their mothers, there was a severe outbreak of scurvy in the spring and summer of 1919, affecting both breast-fed and artificially nourished infants, and in some cases the mothers also. About 300 infants were affected, and thirty died. In the case of the breast-fed infants the defective diet of the mothers was assumed to be the cause; in bottle-fed infants, not the lack of cow's milk, but its too frequent heating and staleness. Examination of the children, ranging in age from ten months to about three years, who had suffered from this or a previous outbreak of scurvy, revealed signs of rickets and of delayed growth and development in varying degree. From observations in this institution and elsewhere the conclusion was drawn that in Vienna a large proportion of infants in whom no symptoms of scurvy could be detected were suffering badly as regards general health, growth, and development by reason of the deficiency of antiscorbutic material in their diet. This opinion is, we believe, very generally entertained by those who have had experience of the treatment of young children in the poorer parts of London. Under conditions there existing it is difficult to prove its truth, but the free addition of oranges and lemons to the diet seems to have a most beneficial effect. With the co-operation of Dr. Zafl, the physician in charge of this home in Vienna, certain additions were made to the diet of the children; as extra antiscorbutics raw swede juice, orange juice, or neutralized lemon juice were used; extra antirachitic material was given in the form of butter and cod-liver oil; to some children both these extras were given. The effect after two or three months was so encouraging that the scope of the experiment was continually enlarged at the desire of Dr. Zafl, so that there may soon be no untreated infants left to serve for comparison.

In Vienna not only scurvy, but rickets, developed with great frequency in breast-fed infants, often when less than six months old. An experiment is in progress by which mothers nursing young infants are provided with a daily ration (50 grams) of butter and raw swede (30 grams). Careful investigations made in New York by Hess and Unger in 1917 afforded statistical evidence in favour of the common belief that cod-liver oil has an effect in preventing rickets, and it is proposed to make a similar investigation in Vienna, where almost all children of the poorer classes over one year old are rickety. On the same lines a precise study is being made in the University children's clinic; there von Pirquet's so-called "Nem" system of nutrition is adopted. Under it the energy value of the diet is nicely adjusted to the needs of the growing child, but no attention is paid to the vitamine value. Professor von Pirquet has assigned to the mission six cots in a ward served by a kitchen in which all food is prepared with laboratory exactness and subject to regular analysis.

It appears that osteomalacia became a common disease in both sexes and at all ages in the spring and summer of 1919. The cases that then occurred improved during the later part of the summer, but patients again became numerous about the beginning of December. Formerly the disease was rare and confined to pregnant women in Vienna, as elsewhere, but inquiry showed that it had been present almost continuously during the war in many of the convents of the city, where, especially since the revolution, great privation as regards both food and fuel has been suffered. In one convent a large proportion of the nuns were, in December, 1919, found to be suffering from the disease, some of them in a very severe form. Between twenty and thirty cases were treated in three groups: one received extra calories in the form of sugar and cereals, another extra food in the form of vegetable fats, the third extra fat containing "fat-soluble" accessory factor in the form of butter, eggs, and cod-liver oil. The results obtained during the first two months are held to make it probable that deficiency of the fat-soluble accessory factor is the cause. An inquiry begun at the Allgemeines Krankenhaus in January is considered to point in the same direction. Cases there are under the care of Professor Schlesinger, who is of opinion that the disease is probably nutritional and due to some special deficiency in the diet rather than to general under-nourishment. He therefore seems to be

approaching the opinion formed on the experiments here, in India, and in America, as to the importance of the accessory food factors, experiments which, it would appear, have hitherto attracted little attention in Vienna. Another inquiry is in progress in Professor Wenckebach's clinic. Cases of osteomalacia are selected from among those applying to the medical departments of the insurance benefit societies, and it is proposed to institute a trial, on a large scale, of the value of cod-liver oil. Hitherto patients in the clinic have received a regular weekly supply of a vegetable oil of unknown composition, containing a small amount of phosphorus. It has in many cases been given for several weeks or months without any very definite result; it will now be replaced by cod-liver oil.

Dr. Chick has given several lectures, including one to the medical and pediatric society; it was followed by an unusually lively and interesting discussion. A large number of physicians related their personal experience of deficiency diseases during the war, and put on record many significant observations concerning "hunger-polyneuritis," "hunger-oedema," scurvy, and hemeralopia. The fact that recent work on the subject of accessory food factors is almost unknown in Germany and Vienna is to be accounted for by the circumstance that it has been published almost exclusively in English and American journals, which have for some time been out of reach of Austrian and German readers, more especially now, owing to the depreciation of their respective currencies. An appeal is made on this matter by Sir Clifford Allbutt and Sir James Mackenzie in our correspondence columns, and will no doubt meet with a generous response.

THE EPIDEMIOLOGY OF PHTHISIS.

II.

IN an article published last week we dealt with the earlier parts of the third instalment of Dr. Brownlee's statistical inquiry into the epidemiology of pulmonary tuberculosis.[1] Reference was made to his view that the decline in the phthisis death rate is not due to an elimination of susceptible units by the operation of a selective fertility rate, and it was pointed out that the slackening of the rate of decline of phthisis mortality was shown by statistics of a later date than those used by Dr. Brownlee. It was also pointed out that such changes in the death rate from phthisis as have occurred in London since 1851 are consistent with the hypothesis that general hygienic improvements are responsible for it. From these subjects Dr. Brownlee passes to a brief discussion of the general decline in phthisis since 1850 and some remarks on the phthisis of old age. He then takes up the question of wind and phthisis to which Dr. William Gordon of Exeter has devoted much attention. Dr. Brownlee's statistical analysis leads him to confirm Dr. Gordon's hypothesis that exposure to south-westerly winds increases the death-rate from phthisis. The historical student is reminded of the prevalence of southerly winds in the first constitution of Thasos, and the great mortality from phthisis which accompanied it. In the areas in which the association is found phthisis is of the young adult type, and it is to this type, Dr. Brownlee believes, that the wind exposure contributes. In the following chapter Dr. Brownlee considers the relation between phthisis and the nature of the subsoil, which he thinks has some importance for young adult phthisis but not for the disease of middle age. He does not, however, consider his results sufficiently extensive to justify a firm conclusion.

The following chapters are devoted to migration (which is not examined in detail), tuberculosis at early ages (which is differently correlated with phthisis in different districts), and the relation between tuberculosis and the milk supply. Dr. Brownlee takes as a criterion of the prevalence of bovine tuberculosis the percentage of samples of milk found to be infected, and shows that this is highly correlated with the standard death rate of the county of origin; it is also appreciably correlated positively with the death rate from "middle age" phthisis, but negatively correlated with that of "young adult" phthisis. Finally, there is a large positive correlation between the milk infection rate and the death rate under 5 from tuberculosis and with the death rates from tuberculous meningitis and abdominal tuberculosis. It is important to notice that the milk rate is highly correlated with the prevalence of forms of tuberculosis not caused by the bovine type of bacillus. Dr. Brownlee makes the tentative suggestion that bovine and human forms may be modifications of a common type, perhaps capable of saprophytic existence.

The report concludes with a geographical study of the distribution of phthisis in England and Wales as a whole, and a more detailed study of the Welsh experience. Wales was selected because in the Principality there is little middle age and much young adult phthisis. This section cannot be summarized, but the conclusion is drawn that exposure to wet and cold, together with poor feeding (in particular a lack of animal food), are important predisposing factors.

We have, perhaps, said enough to mark our sense of the importance of Dr. Brownlee's memoir. The history of opinion upon tuberculosis is full of instruction. It is thirteen years since Karl Pearson published his first paper defending with the powerful statistical weapons which he had forged and sharpened, the ancient doctrine that an inherited predisposition is an important factor of the disease as a national malady. Since then Pearson himself and his pupils—the Eldertons, Heron, and the late Charles Goring (whose death has deprived medical statistics of a gifted adherent)—have done much to reinforce the conclusions drawn and to throw doubt upon the value of panaceas. It cannot be said that any of these papers much influenced the trend of popular medical opinion at the time, and the elaborate historical and pathological essay of Bulloch and Greenwood, now nine years old, did little more to inoculate the profession with a doubt as to the claims of the various conquerors and stampers out of consumption.

Whether these investigators did in the long run have more influence than appeared, or whether the change of opinion is analogous to that spectacle, "not of argument or of conflict, but of a silent evanescence and decay," which, as Lecky said, characterized the decline of belief in witchcraft, is hard to say. It is perhaps most probable that increasing appreciation and utilization of statistical methods in the widest sense—the term not being restricted to the special technique of the biometricians, important as that is—together with some sense of disappointment due to the confrontation of promises and results in the matter of sanatorium benefit, have produced a reaction against the simple faith of fifteen years ago. However this may be, we should as soon expect to hear now in professional circles that the conquest of consumption is a simple matter of hygienic administration as we should have been surprised ten or fifteen years ago not to hear it.

[1] *An Investigation into the Epidemiology of Phthisis in Great Britain and Ireland.* Part III. Medical Research Committee. Special Reports Series. No. 46. Stationery Office. 1920. 2s. 6d.

This change of opinion does not involve any admission of the all-sufficiency of what we may term the eugenic faith. Indeed, a reduction of the problem to exclusive terms of heredity would be as particularist as its reduction to a mere matter of segregating "open" cases and multiplying sanatoriums, and was not contemplated by Pearson or other scientific eugenists. In fact, to quote a sentence in the introduction to Dr. Brownlee's report, the administrative control of tuberculosis "presents a more complicated, though not necessarily therefore a less soluble, set of problems if the conditions which tend to produce phthisis in young adult life, for instance, are different from those which tend to produce it in middle age." This remark is equally applicable to the other complications revealed by other investigators, such as Collis, Greenwood, and Tebb.

Although we do not face the problem of tuberculosis with the same confidence as in the days of "rare and refreshing fruits," the position is really much more satisfactory. Not only is the need of further investigation as a prelude to action properly realized, but examples of the kind of research necessary have been provided. Amongst such Dr. Brownlee's papers take an honourable place. Let us hope that other official and unofficial investigators will soon take their places in a field which can support many cultivators.

THE NATURE OF ECLAMPSIA.

In a recent paper Obata of Tokio has recorded some interesting observations which appear to shed considerable light on the etiology of eclampsia.[1] In 1911 Dold drew attention to the fact that saline extracts made from certain of the viscera possess a poisonous property which is neutralized by normal serum. Obata therefore set himself to determine, in the first place, whether the placenta contains such a poison. As soon as the placenta was expelled the umbilical cord was cut off together with the portion of the placenta surrounding its attachment. As much blood as possible was then expressed from the placenta and the decidual tissue removed. The cotyledon—preferably that portion most deficient in large villi—was then cut into pieces, ground in a mortar, and mixed with 0.85 per cent. saline solution in the proportion of 1 in 3 by weight. The mixture was stirred and allowed to stand for half an hour at room temperature, and then filtered through fine silk. The filtrate was centrifugalized, and the supernatant fluid—designated placental extract—was used for experiment. The extract had a pale pink colour, but contained no solid particles in suspension. As a rule freshly prepared extracts from placentae taken immediately after birth were employed. The animals used were Japanese dancing mice, and the placental extract was injected into their caudal vein. After an interval of ten to thirty seconds—rarely as much as a minute—the animal became excited and then fell at once into a brief clonic or tonic convulsion. This was succeeded by violent dyspnoea, coma, and finally death within one to three minutes after the beginning of the convulsion. While these symptoms occurred in the majority of cases, instances occasionally occurred in which death took place after an interval of hours or days. Even in these cases, however, the two most prominent symptoms were dyspnoea and convulsions.

The placental extract was found to kill in a dose of 0.025 to 0.15 c.cm. in the case of normal placentae, and in a dose of 0.019 to 0.1 c.cm. in the case of eclamptic patients. The toxicity of the eclamptic placenta, therefore, was hardly to be distinguished from that of the placenta from normal cases. It was found that fresh serum from normal persons when injected intravenously into mice produced symptoms which differed only slightly from those produced by placental extract. No substantial difference, however, was found between the serum of normal and of eclamptic gravidae in this respect, nor could any increase in toxicity be found in the serum of a patient during an attack of eclampsia and after recovery from that condition.

Obata now proceeded to determine the relative capacity of fresh serum of normal and eclamptic patients respectively to neutralize the toxicity of the placental extract. One c.cm. of the latter was placed in contact with amounts of serum varying from 0.7 to 0.025 c.cm., physiological saline added to bring the mixture up to 2 c.cm., and the fluid injected after being left for one hour at 37° C. It was found that the serum either of normal men, or of normal non-pregnant women, or of normal pregnant women, possesses a power practically uniform of neutralizing the poisonous property of placental extract, 0.2 to 0.3 c.cm. of such serum sufficing to neutralize 1 c.cm. of the extract. This neutralizing power was found to be considerably reduced in the serum from women during an eclamptic attack, as much as 0.6 c.cm. being then required to neutralize the toxicity of the placental extract, whereas after recovery from eclampsia 0.3 to 0.4 c.cm. and sometimes 0.2 c.cm. of the patient's serum was sufficient. Experiments were made to determine whether the neutralizing power was increased during normal pregnancy, but the result was negative. Hence no evidence was found to indicate that the neutralizing power is due to an immunological process.

The lesions found in the bodies of animals that succumbed to the placental extract were broadly similar to those present in fatal cases of eclampsia in the human subject, and from the result of his observations Obata concludes that the true nature of eclampsia is nothing other than an intoxication by the placental poison, which is made possible by a weakening in its normal capacity for neutralization on the part of the maternal blood. As to the cause of this weakening, however, Obata offers at present no opinion. Work on the matter is in progress.

[1] Isei Obata (Forensic Institute of the Imperial Institute of Tokio), *Journal of Immunology*, 1919, vol. iv, p. 111.

INCOME TAX AND SERVICE GRATUITIES.

We have more than once drawn attention to the fact that the Finance Act for 1919–1920 provided for the repayment of income which had been deducted from gratuities on demobilization from wound pensions. It is, perhaps, advisable to call attention to the indirect effect resulting from the exemption of these receipts from income tax. Income which is not assessable cannot be brought into the computation of total income for the purpose of determining the appropriate rate of tax, with an exception in the case of certain classes of foreign residents, which does not touch the present question; consequently there may very well be cases in which the adjustment of the tax deducted would include repayment of a portion of the tax levied on other income. For instance, suppose that A, demobilized in 1917–1918, had an income of £600 from investments and was assessed by the War Office at £500 for military pay and gratuity, then he would have been taxed at 4s. 6d. on £600 and at 2s. 3d. on £500; assuming the unassessable gratuity to be £200, the correct liability would be £600 at 3s. 9d. and £300 at 1s. 9d., thus involving a repayment greater than the tax on the gratuity, because the elimination of that amount brings the total income below the limit of £1,000. These figures are taken more or less at random;

the principle might, of course, operate at other limit points—for example, the £400, £600, and £700 "abatement" limits, the £800 limit point for family allowances, or the £500 limit for the lowest rate of tax. No special intimation of such claims would seem to be necessary; the repayment made on the general claim should extend to any indirect results, except in the case of "family" allowances becoming claimable as a result of the reduction in total income, where the circumstances should be stated, as otherwise the repaying authority would not be cognizant of the further repayment due.

RADIO-THERAPY IN CANCER OF THE UTERUS.

IT may not, perhaps, be generally known in this country that Stockholm during the last few years has become an important centre for radiology, to which radiologists of the other Scandinavian countries resort for inspiration and guidance. The leading spirit is Professor Gösta Forssell, who has surrounded himself with an able staff of assistants. One of them, Dr. J. Heyman, recently read a paper before the Swedish Medical Society on the results of radium treatment of cancer of the uterus as judged by an observation period of five years or more. The remarkable figures he published were given in the *Epitome* on March 6th (No. 256). Discussing these figures, Professor Forssner compared them with those of operative treatment, and he prophesied that the time must inevitably come when the surgeon would have to abandon this field altogether to the radiologist. Accounts of the activities of "Radiumhemmet" in Stockholm by Danish and Finnish medical men, who have spent several weeks studying Professor Forssell's methods, reflect the glamour with which this institution is surrounded. Dr. N. Emeleus[1] writes of patients entering "Radiumhemmet" pale and debilitated, bloodless, and with an offensive vaginal discharge due to absolutely inoperable cancer of the uterus. A little later he describes the same patients on discharge, in perfect general health, without a sign of malignant disease, and with a growth of new epithelium in place of discharging ulcers. Even the patients who subsequently relapse are given a reprieve of one to three years, during which they are fit for work and are free from the pain and offensive discharge of untreated cancer. Death in these cases is, he says, easy and painless. Dr. Ib Hansen's[2] account is as enthusiastic, but much fuller. According to him, this treatment was begun by Professor Forssell in 1910; since then his supply of radium has been gradually increased to about 90 cg. Since 1914 he has made little alteration in his technique. "Radiumhemmet" consists of two large buildings with accommodation for in-patients and out-patients. The treatment with radium is supplemented by *x*-ray treatment. The results have been found to depend largely on the age of the patient, the prognosis being much worse for patients under 40 than for the higher ages. Heart disease is also of bad omen. The immediate results are so extraordinarily good that the patient is apt to neglect further treatment, assuming that a permanent cure has been effected. It is the practice, therefore, to warn the patients beforehand of this danger, and funds have been provided to defray the expenses incurred by patients coming to Stockholm for after-treatment. Once relapse has occurred, either locally or in the pelvic glands, further treatment with radium appears to be hopeless.

AN EPIDEMIC OF HEMERALOPIA.

EPIDEMICS of night blindness occurred in the armies during Napoleon's campaigns and in the Crimea campaign, but little was heard of it during the recent great war. Tricoire has recently recorded[3] its occurrence in the Serbian army during its retreat in the winter of 1915. The total number of cases was 320. Previous investigators agreed in connecting the occurrence of epidemic hemeralopia with an insufficient diet, especially want of animal food. Tricoire produces good evidence in favour of including it under the deficiency diseases. For several months the Serbian troops lived exclusively on dried beans, lentils, and decorticated rice, along with stale lard and white bread. After a certain time an epidemic of night blindness occurred, the number of cases varying from day to day without obvious reason. During the daytime the patients could carry on as usual in apparently perfect health, but as the day waned visual acuity diminished, so that by night time they were quite unable to see and had to be led by their comrades. Ophthalmoscopic examination was negative. The administration of cod-liver oil was found to be very efficacious, all the cases being cured after taking 50 to 75 grams of the oil. The epidemic ceased when more generous rations—including fresh or frozen meat and green vegetables—were supplied to the troops. Seeing that the energy value of the previous ration was about 2,000 calories, and that the patients showed no signs of anaemia, emaciation, oedema, or asthenia, but were invariably healthy-looking, mere insufficiency in quantity of diet would not seem to account for the condition. The important part that the so-called vitamines of diet play in maintaining health is now widely recognized, and the absence or deficiency of these substances in the causation of beriberi, scurvy, and pellagra is admitted. Tricoire shows that the diet of the Serbians in the retreat was deficient in fat-soluble A factor. MacCollum and Davies, by depriving rats of this substance, produced blindness, which disappeared rapidly on the resumption of a diet in which it was abundant. Cod-liver oil, that proved so beneficial in the epidemic, is rich in these. In six of his cases Tricoire found scurvy co-existent with hemeralopia. These facts go to show that epidemic night blindness is to be ranged alongside scurvy as one of the deficiency diseases, but the distinct separation of this particular condition from the others, with the exception of the six cases, would seem to support the idea that there are specific vitamines. It should be recognized, however, that there may be certain natural peculiarities to be taken into account in addition to lack of vitamines.

VISCERAL ANALGESIA IN TABES.

THAT the visceral crises of tabes may be easily mistaken for an acute abdominal emergency is well known. That visceral analgesia in tabes may mask the occurrence of such an emergency is less well known. Hauser of Mannheim recounts in great detail such a case.[1] A man, aged 45, was suddenly taken ill after a meal, and retired to bed feeling sick, but did not vomit. Two days later a doctor was sent for, but beyond the fact that the patient seemed very ill nothing definite could be made out. The next day the man was obviously very ill indeed; he was collapsed with small, thready pulse, covered with cold sweat, and the heart was almost inaudible. There was no abdominal pain, either spontaneous or to be elicited by pressure, no rigidity, and no enlargement of the liver. But the pupils were fixed, the knee-jerks absent, and on questioning it was found that the patient had had syphilis for twenty years and had undergone much treatment. The man's condition becoming still more desperate, it was obvious that he was suffering from something more than a visceral crisis, of which he had had several. A surgeon called in diagnosed retroperitoneal blood extravasation. Saline infusion was twice given intravenously. The patient died three days after the onset of the attack; the only abnormal physical sign noted was a tympanitic patch in the left hypochondrium, diminishing the heart's dullness. At the necropsy a perforated duodenal ulcer was found, with general peritonitis and free gas in the abdominal cavity. This case is a

[1] *Finska Läkaresällskapets Handlingar*, November and December, 1919.
[2] *Ugeskrift for Laeger*, March 11th, 1920.
[3] *Paris médical*, February 21st, 1920.

[1] *Deut. med. Woch.*, 1919, 45, 129.

remarkable example of the manner in which tabetic visceral analgesia may entirely obscure a severe abdominal lesion. From first to last the man's abdomen was entirely painless and flaccid. The sensory portion of the reflex arc necessary for protective rigidity of the abdominal muscles was interrupted by tabes. The case is, further, an interesting example of the protective value of pain. Schüller[2] has published a somewhat analogous case, a sudden death in a tabetic, where severe haemorrhage from a gastric ulcer was found. He draws a comparison between gastric ulcer in tabes and perforating ulcer of the foot, Exner and Schwarzmann[3] having shown that gastric ulcer frequently follows experimental section of the vagus. However this may be, it is more than possible that many deaths in tabetic subjects may be due to abdominal perforations. Much information on this subject might be gained from Poor Law infirmaries, wherein a wealth of clinical and pathological material is lost every year.

AMERICAN MEDICAL SCHOOLS.

The number of medical students in the United States during the year ending June 30th, 1919, excluding those attending preliminary, special, and post-graduate courses, was 13,052, a decrease of 578 as compared with the previous year. Of the total number, 12,259 (93.9 per cent.) attended regular colleges, 397 (3 per cent.) homoeopathic, and 86 (0.7 per cent.) eclectic schools, while 310 (2.4 per cent.) were enrolled in three "nondescript" colleges, consisting of two semi-osteopathic and one nominally eclectic college. The total number of graduates was 2,656. The number of graduates from the regular colleges was 2,423, less by 31 than in the previous year. The number from the homoeopathic colleges was 89, or 25 less than in the previous year; from the eclectic colleges there were 28, or 14 less than in 1918. Of all medical graduates 44·4 per cent. held degrees in arts and science, as compared with 38.4 in 1918, 32.5 per cent. in 1917, 26.9 per cent. in 1916, and 15.3 in 1910. This increase is what was expected from the general adoption by medical schools of the requirement of two years of college work before entrance. Of the 2,423 graduates from regular schools, 1,162, or 48 per cent., had a bachelor's degree in arts or science; of the homoeopathic 16, or 18 per cent., and of the eclectic graduates 2, or 7.1 per cent. Of the 116 "nondescripts" not one held such a degree. The number of women studying medicine was 686, being 105 more than in the previous year and 76 more than in 1917. The percentage of women to the whole number of medical students, 5.2, is larger than in any previous year. There were 107 women graduates, one more than in 1918. Of the women matriculants, 66 attended the one medical college for women, while 620 (90.4 per cent.) matriculated in the fifty-nine co-educational colleges. From the one women's college there were 7 graduates, while 100 (93.4 per cent.) got their degree from co-educational colleges. The *Journal of the American Medical Association* attributes this increase of women students in co-educational colleges to the fact that in recent years some of the largest and oldest medical schools in the States—Columbia, Tulane, the University of Pennsylvania, Harvard and Western Reserve University, Ohio—have opened their doors to women. Since June 30th, 1918, five colleges have been closed, leaving 85 still in existence. Of these, 76 are regular, 5 homoeopathic, 1 eclectic, and 3 nondescript. There is one doctor to every 720 of population in the United States.

LETHARGIC ENCEPHALITIS.

THE position with regard to the incidence of lethargic encephalitis in Europe is not clear nor altogether free from cause for anxiety. The number of cases in England and Wales at the present time has risen to at least 13, and most of these seem to have developed within the last few weeks. Of the 13 cases 7 are reported from the Spalding and Donnington districts of South Lincolnshire, and the Ministry of Health is making an inquiry there. No evidence has hitherto been obtained that the disease is directly communicable from man to man, but, as in Lincolnshire, it sometimes occurs in groups. It does not help matters very much to say, with Professor Bosc of Montpellier, that the disease is epidemic but not disseminated by contact. During February 18 cases were recognized in and around Montpellier, and some were rapidly fatal, owing, as was thought, to involvement of the vagus. The characteristic symptoms—ophthalmoplegia, which may be internal, external, or both, somnolence, and some elevation of temperature—point to infection producing a low grade of inflammation at the base of the brain; but Bosc describes more general symptoms, including severe backache and pain in the abdomen, and speaks of a prodromal pharyngitis, which he thinks may indicate the port of entry of the infection whatever its nature, as is supposed to happen in acute poliomyelitis. At a recent meeting of the Académie de Médecine M. Chauffard criticized the term "lethargic encephalitis" on the ground that during the present epidemic cases are occurring in which lethargy is replaced by delirium, epileptiform convulsions, clonic spasms, and psychic disturbances; cases have also occurred in which patients have gone about, although sometimes presenting some paralysis of the ocular muscles. His suggestion is that a better term would be "epidemic encephalitis" as proposed by Hall. In individual cases it might be qualified by the addition of an adjective indicating the particular form of the clinical symptoms presented. Bosc suggests some relation with influenza, and in this connexion the cases of lethargy apparently due to that cause described by Dr. W. M. Crofton last week (p. 431) will be recalled. Influenza in England and Wales, though it has not attained serious proportions, seems still to be increasing. During the last three weeks of February 448 deaths were attributed to this cause in the ninety-six great towns, and 738 in the first three weeks of March. The sporadic occurrence of lethargic encephalitis is clearly a possibility that must at present be borne in mind. It appears to be possible to confound it not only with typhoid fever but also with syphilitic meningitis of sudden onset.

MEDICAL INSPECTION AND TREATMENT OF SCHOOL CHILDREN.

THE Board of Education has prepared draft regulations[1] consolidating various previous regulations dealing with the medical inspection and treatment of children attending public elementary schools, the provision of meals, physical training in public elementary schools, evening play centres, and schools for blind, deaf, defective, and epileptic children. All these services are now taken into account in determining the single grant which will in future be paid to local education authorities. The consolidation of the various regulations is intended to indicate that the provisions of the Education Act, 1918, and the Ministry of Health Act, 1919, for promoting the healthy physical and mental development of children and of the population generally must be closely co-ordinated and their development determined by a common policy. One article, in providing for the appointment of the school medical officer to the local education authority, lays it down that while he will be primarily concerned with the medical supervision of children in elementary and special schools, he is to be assigned definite duties with regard to provision of meals, physical training, and other matters affecting the healthy physical and mental development of the children. As the Education Act, 1918 (Section 18), not only provides for the medical inspection of children attending secondary and continuation schools and other similar institutions, but also empowers the local education

[2] *Wien. klin. Woch.*, 1908.
[3] Ibid., 1912, p. 1455.

[1] Presented to Parliament. [Cmd. 617.] Price 3d. net.

authority to arrange for their treatment, it is considered essential that the medical officer should have before him particulars of the medical records of the children during their attendance, if any, at elementary schools; there is a provision also that should a child leave a public elementary school and enter a school under another authority, particulars of the medical record should be forwarded to the authority or the governors of the new school. The authority is required to make provision not only for the periodical medical inspection of children in special schools, but also for their appropriate medical supervision and treatment. Another article provides for the admission of children to special schools from the age of 2 instead of at 5 as at present; grants will be made for them at the same rate as for older children.

OPERATIONS ON PENSIONERS.

We are sometimes asked by readers what may happen to the pension of a disabled ex-soldier who, having been awarded a permanent pension, improves in health and earning power by reason of an operation or other medical or surgical procedure. The question is of some importance both to the medical man and to his patient, and we have therefore referred it to the Ministry of Pensions Article 5 (1) of the Royal Pensions Warrant of December 6th, 1919, lays down that "when a permanent pension has been granted, it shall not be altered on account of any change in the man's earning capacity, whether resulting from training or other cause." We are informed that "other cause" includes improvement following operation or medical treatment. Once it has been made, a permanent pension (as distinguished from a conditional award made until the disability reaches its final and stationary condition) cannot be altered to the man's detriment, even if following operation he improves so much as to become an international football player.

Medical Notes in Parliament.

Criminal Law Amendment Bills.—The Government bill of 1918 to amend the Criminal Law Acts and the bill introduced by the Bishop of London for the same purpose were both read a second time in the House of Lords on March 23rd, and referred to a Joint Select Committee. The bishop in his measure proposes to raise the age up to which consent shall be no defence against charges of carnal knowledge from 16 to 18, and he has also inserted a clause for the protection of boys against women. Otherwise his bill simply takes up several of the provisions of the Government bill.

Miners' Nystagmus.—In reply to several questions by Mr. Swan as to miners' nystagmus, Major Baird, Parliamentary Under-Secretary to the Home Office, stated that the last year for which figures are available was 1914; in it compensation was given in 5,992 cases. The total was made up of 3,218 cases continued from previous years, and 2,774 new cases. He could not give the amount of compensation. Working in the insufficient light given by miners' lamps was the main cause of the disease, and the question of improving the illumination was being investigated by a departmental committee, under the chairmanship of the Chief Inspector of Mines, appointed last May. It was taking evidence both from those engaged in the industry and from scientific and medical experts. Researches were being conducted at the Home Office Experimental Station at Eskmeals and elsewhere, and a series of practical trials were about to be made with lamps giving a better light. The importance of a good light was recognized, but the Government could not take legislative steps to ensure it while the inquiry was still proceeding.

Antityphoid Inoculation.—Mr. Churchill has informed Mr. Clement Edwards that during 1917 there were in France approximately 30,000 men who had not recently, or had never, been inoculated. During 1918 the number was approximately 70,000. Good sanitation always had a beneficial effect in checking the spread of disease. It was, however, also true that the immunity these men enjoyed was due to the fact that there was only a very small proportion of non-inoculated men in each unit.

Sweetened Condensed Milk.—Mr. Thomas Griffiths asked, on March 29th, whether the allowance of sugar for sweetening condensed milk was based on advice that this was a suitable form in which milk could be used for the feeding of infants. Mr. Parker, for the Minister of Food, replied that an answer given on March 17th to Sir Alfred Yeo was intended to indicate that a demand did in fact exist for sweetened condensed milk for the feeding of infants, but not that it was suitable for the purpose.

Stamp Duties on Patent Medicines.—Last week Mr. R. McNeill asked a question as to the increased cost of "patent medicines" owing to increased cost of production, the prices charged to retailers leaving insufficient or no profit to the retailer after paying the stamp duty. Mr. McNeill wished to know whether the Chancellor of the Exchequer would consider the question of providing a margin of profit by a rearrangement of the duties, so that articles not exceeding 1s. 9d. in value might pay a stamp duty of 3d.; articles not exceeding 3s. 9d. a duty of 6d.; and articles not exceeding 6s. a stamp duty of 1s., in lieu of the duties payable under the existing law. Mr. Chamberlain said that he had received representations, and they were being considered.

Fibroid Phthisis.—Mr. Shortt, in answer to Mr. Will Thorne on March 29th, said that workers employed in certain sections of the metal grinding trade did undoubtedly incur serious risk from the disease known as fibroid phthisis or silicosis, and a special inquiry into these trades was in progress with a view to supplementing the regulations at present in force for the prevention of the disease, and to make a scheme or schemes of compensation under the special powers given for this purpose by the Workmen's Compensation (Silicosis) Act of 1918. The inquiry was difficult, and had to cover a wide field, but was being proceeded with as rapidly as possible.

Expenditure of Medical Research Committee.—Mr. Waterson asked, on March 25th, how much a year was deducted by the Insurance Commissioners from the contributions of the National Health Insurance Act and handed over to the Medical Research Committee, and how much of the amount was spent on salaries and wages. Dr. Addison replied that no deduction was made from the contributions under the National Insurance Acts for purposes of research. The sums appropriated for research were paid out of moneys provided by Parliament. An account of the receipts and payments of the Medical Research Committee, audited by the Comptroller and Auditor-General, was submitted each year to Parliament with the annual Appropriation account of the National Insurance Joint Committee. The account for 1918–19 would be found on p. 347 of the Appropriation Accounts of Civil Service and Revenue Departments for 1918–19.

Sanatorium Treatment.—In reply to Lieutenant Commander Kenworthy, on March 25th, Dr. Addison said that institutional treatment for insured persons suffering from tuberculosis was already being provided in most areas by the public health authorities under agreements made with the Insurance Committees, and it was proposed to transfer the duty of providing such treatment to appropriate public health authorities. He hoped to introduce legislation for the purpose at an early date. Domiciliary treatment for insured persons suffering from tuberculosis would be provided by Insurance Committees under Clause 4 (3) of the National Insurance Amending Bill as part of medical benefits.

National Insurance Expenses.—On the motion necessary in Committee of Supply to cover the new financial proposals contained in the National Insurance Amending Bill, Dr. Addison said that under the new scheme the Treasury contribution of two-ninths represented an expenditure of £1,772,000. The men of the army and navy and other forces had had three-halfpence a week deducted from their pay as their share of the contribution. It was proposed that this should be made good by the Exchequer, and it would represent an additional charge of £290,000 a year. There was another small item, which was estimated to cost £30,000, in respect of the penny grant towards low wage earners. In answer to a question by Mr. G. Locker-Lampson, Dr. Addison stated that the majority of deposit contributors were in this category by their own choice, and there was no evidence of any general desire for the abolition of deposit insurance. If it were at any time found that an appreciable number of insured persons was unable to obtain admission to approved societies, he would refer to the Insurance Consultative Council the question of making some alternative arrangement.

Clothing for Tuberculous Patients.—Sir James Craig, in reply to Mr. Gwynne on March 24th, stated that under the present regulations of the Pensions Ministry underclothing and great-coats were provided on loan for men in sanatoriums and others institutions, and great-coats for the use, where necessary, of men under out-patient treatment or treatment at home. Local committees provided extra blankets for men suffering from tuberculosis who were under open-air treatment at home, if certified to be necessary.

Disability Pensioners' Rights.—Sir James Craig stated, on March 24th, that a disablement pension was awarded without reference to contributions levied under the National Insurance Acts, and was not reduced because a partially disabled man might also be receiving sickness benefit under those Acts.

Indian Medical Practitioners in East Africa.—In reply to Mr. Waterson, who asked whether Indian medical practitioners in British East Africa were forbidden to carry on independent medical practice, Lieut.-Colonel Amery, Parliamentary Under-Secretary to the Colonial Office, said that the question of medical practice in the East African Protectorate was governed by the Medical Practitioners and Dentists Ordinance, 1910. Under it the holder of any British Indian degree, diploma, or licence entitling him to registration in the United Kingdom was entitled to registration as a medical practitioner in the East African Protectorate. Under the same ordinance the practice of systems of therapeutics according to native, Indian, or other Asiatic methods was permitted for persons recognized by the community to which they belong to be duly trained in such practice, subject to provisos that such systems might only be practised among the community to which the practitioner belongs, and that no act under any such system on the part of such persons as was dangerous to life should be permitted.

England and Wales.

MEDICAL INSPECTION AND TREATMENT OF SCHOOL CHILDREN IN LONDON.

AT the meeting of the London County Council on March 30th it was decided to arrange for the medical inspection of all children when leaving elementary schools. The Education Committee advised that such medical inspection would be of great value in connexion with advice as to future employment, and would also be equivalent to an entrance examination to the day continuation schools to be set up under the Education Act, 1918, for young persons up to the age of 16 or 18 years. Only those children found defective on leaving the elementary schools would be re-examined during their first year in the day continuation schools, and the general medical examination would not take place until the second year. The children in the elementary schools are in future to be examined at entry, at the age of 8 years (when retardation, dullness, and mental defect will be specially considered), at the age of 12, and again on leaving. The Council's scheme for dental inspection is also to be varied to provide for examination on entrance to elementary schools. As children of 5 are often found to be suffering from dental caries, premises are to be opened in Woolwich as a centre for operations for tonsils and adenoids, and the children may remain for two days afterwards. About 2,500 cases a year will be accommodated, the annual expenditure amounting to £1,850. Surgeons attached to the treatment centres in south-east London, which will be contributory to this operative centre, will have an opportunity of operating on their own cases.

The Education Committee proposes to recover the cost of medical and dental treatment from parents. It is stated that before the war the total amount received from parents was only 3 or 4 per cent. of the cost of treatment, and did not equal the expense of collection; and since the war, the cost of treatment having greatly increased, the position has become worse. Inquiries in seven large English cities showed that, apart from the supply of spectacles, no charge was made for treat-treatment, except in Birmingham, where 2s. is charged for ear, nose, and throat cases, and in Liverpool, where 7s. 6d. is charged for such cases, and also for ringworm cases. In London the average cost for ear, nose, and throat cases is 8s. 5d., for minor ailment cases 7s. 1d., for dental cases 5s. 9d., and for ringworm cases £1 3s. 10d. It is proposed to make arrangements whereby parents not able to pay a private practitioner's fees but able and willing to pay the full cost to the Council should be enabled to do so. The charges to parents who cannot afford or are not prepared to pay the whole cost of treatment are to be, in the case of minor ailments, 1s. for a period up to six months, and the same for each subsequent period, but no charge is to be made for treatment not exceeding a fortnight; in all other cases, including dental cases, 2s. a case is to be charged, but the amount will be wholly remitted in the case of the necessitous.

The Board of Education criticizes the Council's scheme for part-time clinics at special remedial exercises centres, holding that one medical officer with suitable qualifications would be preferable to a system by which three of the Council's school doctors visit the centres once a month. The Board suggests that the Council should establish one whole-time clinic, properly staffed and equipped, and under the supervision of a medical officer having adequate experience of orthopaedics—a suggestion to which the Education Committee is giving consideration.

APPOINTMENT OF L.C.C. MEDICAL OFFICERS.

The London County Council recently made some readjustments of its medical staff, creating vacancies for ten permanent whole-time assistant medical officers, thirteen whole-time assistant medical officers appointed for one year, and twenty-six part-time officers, also appointed for one year. The total number of applications was 190, from 134 applicants, and 71 were selected for interview. Of the 49 doctors recommended, 42 were or had been temporarily employed in connexion with the school medical service. The salary of officers in the first of the three categories is £400, rising to £500; and of those in the second, £400, both these salaries being based on pre-war conditions and at present subject to a temporary addition of 30 per cent., *plus* £60 a year. The salary of the part-time officers is £180 a year, and is based on current economic conditions.

CENTRAL MIDWIVES BOARD.

The Central Midwives Board for England and Wales held a final session on March 18th, Sir Francis Champneys in the chair. Six midwives were removed from the roll. Serious negligence, leading in three instances to fatal results, was among the charges. In two cases the Board brought into force Clause 8 of the Midwives Act, whereby the women were not only removed from the roll of midwives, but also prohibited from attending in future at childbirth in any capacity. The ordinary monthly meeting was held on March 19th. The Chairman opened the proceedings by rising to express the deep grief of the Board at the death of Sir Robert Morant, whom he described as a unique and irreplaceable man whose loss would be long and deeply felt. The Board desired to record their sorrow at his death and to send a letter of sympathy to Lady Morant. The list of examiners as submitted by the Secretary and the revised list of lecturers were approved. It was decided to extend the present approval of existing midwives certified as teachers.

Scotland.

SMALL-POX IN GLASGOW.

AT the end of last week there were eight cases of small-pox under treatment at the Belvidere Hospital, Glasgow. Two new cases admitted during the week were not related to any of those previously under treatment. Dr. Chalmers, M.O.H., states that a large percentage of the children and adolescents of the city have not been vaccinated, and are unprotected from small-pox; they constitute a possible danger to the health of the community, and he strongly urges vaccination, in their own and the public interest.

RADIUM IN CANCER.

At the annual meeting of the Glasgow Royal Cancer Hospital last week, Sir George Beatson, the senior surgeon, said that the institution met a great want, and helped cases unsuitable for admission to the ordinary hospitals. It had unfortunately been necessary to close the research department, but a good deal of quiet work was going on which did not require large funds. The report showed that a number of cases had been treated with radium emanation through the agency of the West of Scotland Radium Committee, and Sir George Beatson said it had given relief in a great many cases. It was reported that 217 patients had been treated in the hospital, and the district nurse had made 1,425 visits. Though it was not considered opportune to make an appeal for the research department at present, it is hoped to do so before long.

India.

MATERNITY AND INFANT WELFARE.

INFANT mortality in India is appallingly high, and the conditions of maternity—pre-natal, natal, and post-natal, general and special—which so vitally affect infant viability and welfare, are profoundly unfavourable to both mothers and children. Medical schools, hospitals, and dispensaries, under Government encouragement and active support, have been established throughout India on a large scale, and have rendered immense service in initiating and promoting medical education, medical relief, and sanitary reform; but it has been felt by the Government, by philanthropists, and by missionaries that more special measures are desirable in behalf of the women and children of India. Accordingly various institutions and agencies have been organized for the very laudable purpose of ameliorating the health of Indian women and saving infant life. These have from

time to time been described in the BRITISH MEDICAL JOURNAL. The first departure in this direction was the Countess of Dufferin Fund, which provides home and hospital treatment for women by women throughout India, and, in addition, educates and trains doctors, compounders, and nurses (BRITISH MEDICAL JOURNAL, September 14th, 1918, p. 295). Affiliated with this fund is the Victoria Memorial Scholarship Fund, which is devoted to the education, training, and supervision of native *dhais* (midwives), a hereditary class in India (BRITISH MEDICAL JOURNAL, December 20th, 1919, p. 830). The Lady Hardinge College and Hospital in Delhi provides excellent facilities for the medical education of Indian women (BRITISH MEDICAL JOURNAL, November 8th, 1919, p. 614).

Finally, an association has been established for the provision of health and maternity supervision. Under the auspices of this institution a book on *Maternity and Infant Welfare*,[1] written by Dr. Ruth Young, has recently been published in India. It is based upon lectures delivered to pupils undergoing instruction in pursuance of the objects of this association. The subjects dealt with are: (1) The hygiene of pregnancy and the puerperium; (2) infant welfare; and (3) the work of health visitors. Under these heads all that relates to child-bearing and infant rearing is systematically expounded. The author has some misgivings as to whether she has successfully avoided the Scylla of undue elementary and superficial explanation and the Charybdis of too elaborate and scientific presentation; but this apprehension is ungrounded, for the information given is clear and sound and quite within the comprehension of educated Indians. For the uneducated oral instruction and advice are best imparted by health visitors. The conditions—climatic, domestic and personal—which affect maternal and infantile health are described, and the special evils resulting from the ignorant practices of native *dhais*, early marriages, purdah seclusion, superlactation, the improper feeding of infants, and other circumstances prejudicial to health, are pointed out and remedies suggested. In treating of maternal and infantile disabilities and diseases the propriety of consulting a doctor or resorting to hospital treatment in certain cases is indicated. In the section dealing with the work of health visitors the "causes which lead to the enormously high rate of infant mortality in India" and the "methods that can be adopted to lessen it" are systematically set forth. In this chapter information is supplied regarding arrangements made by the larger Indian municipalities—Calcutta, Bombay, Madras, Lahore, Delhi, and others—for entertaining nurses, midwives, and health visitors. The example of the larger cities will in time be followed by the small towns, villages, and hamlets of India.

Dr. Young's treatise will undoubtedly fulfil a most useful and beneficent purpose; and, as the general and hygienic education of Indian women progresses, it cannot fail to assist in reducing sickness and mortality among mothers and infants.

LEPROSY.

A conference on leprosy was held in Calcutta during the first week of February. Sir Leonard Rogers gave a lecture on the treatment of leprosy, and the Rev. F. Oldrieve spoke on the Lepers Act and leper asylums and settlements. At a public meeting presided over by the Metropolitan resolutions were adopted urging the Government of India to amend the existing Lepers Act during the next session of the Imperial Legislative Council.

YELLOW FEVER COMMITTEE.

The Yellow Fever Committee appointed by the Government of India commenced its sittings in Calcutta on February 9th. A large amount of information is available regarding the risks of the introduction of the disease into India, and the main matter for the consideration of the committee is the means of prevention which should be taken. It is believed that it will be necessary to establish, in co-operation with Australia and other parts of the empire, a sanitary intelligence service in ports from which infection may come.

[1] *Maternity and Infant Welfare.* A Handbook for Health Visitors, Parents, and Others in India. By Ruth Young, B.Sc., M.B., Ch.B. Calcutta: Butterworth and Co. (India), Ltd. 1920. (Cr. 8vo, pp. 183. Rs. 1.8 net.)

Correspondence.

MEDICAL LITERATURE FOR VIENNA.

SIR,—We have received from Professor Wenckebach sad news concerning the state of Vienna and Austria. Dr. Wenckebach, although he accepted the call to Vienna but a short time before the war, has felt it his duty to abide with the suffering people who honoured him in the days of their prosperity. On the general misery of Austria in material needs it is not our purpose to dwell—it is but too well known; the professor's appeal is for the intellectual needs of a people whose souls are starving. In their penury he says that not a farthing can be had for books or journals, home or foreign, so that for the last three or four years neither teachers nor students have been able to learn what is going on in academical circles. His direct appeal to Great Britain is for recent medical and scientific literature, for which students in all faculties are athirst. He describes the zest with which a group of students will pounce upon any fragment of a journal which may drift into their bare libraries. May we then beg your readers not to throw away journals, books, or papers, and perhaps, furthermore, to make some little sacrifice to spare such literature for the Vienna Medical School. Professor Starling was to have joined us in this appeal, but left for Bombay before his signature was secured. Packets for Professor Wenckebach may be sent to Messrs. Schenker and Co., of 93, Bishopsgate, London, E.C., who have kindly undertaken to forward them in bulk to his care. Any small donations towards transport would be thankfully received by the firm.—We are, etc.,

CLIFFORD ALLBUTT,
J. MACKENZIE.

Cambridge, March 22nd.

OUR OPPORTUNITY.

SIR,—For long the practice of medicine has been unsatisfactory for the public, for the Government, for the medical profession, clinician, investigator, and medical officer of health.

There has been a long fight over the questions of remuneration and regulations, owing to the want of appreciation of each other's point of view, longer and more bitter than need have been. The profession has demanded such pay as shall enable it to do its work efficiently and has rightly been very jealous of its independence. The Government has rightly been anxious to ensure an efficient medical service in return for its expenditure of public money.

Now our differences have been, for the time at any rate, settled, and on the good use of that time depends much of the future success of the practice of medicine, both curative and preventive. If in the future the question of remuneration is raised again, our claim will be strong in proportion to the good use we have made of this time to improve the medical service that we can offer. But proper pay is not the only thing we want to make our work less burdensome and more effective; true, the better our pay the less the number of patients we need see in a given time, and so the more carefully can we do our work, but not even a guinea a head would enable us to give a much better service under the present conditions.

The public want the best treatment to be available for themselves and their neighbours. The proof of their desire is the general interest now taken in all questions of medical service.

The Government is properly desirous of improved public health and well-being, and for the purpose an improved medical service. Proof of the Government's desire for this, and to obtain it in the way most agreeable to the profession, is shown in Sir George Newman's memorandum on preventive medicine. Reading that, one can feel assured of the desire of the Ministry of Health to improve the position of the general practitioner, and assured that there is no fear of a whole-time State medical service unless we, by our diffidence, drive the Government to it. They have also given proof of their intention by their frequent consultations with medical men and organizations, by their setting up of an Advisory Medical Council, by their willingness to arbitrate about terms under the Insurance Act, and the help they are beginning to give to medical research.

The medical profession wants better opportunity for every man, from the general practitioner to the consultant, to succeed in his profession. It wants better means to prevent and treat disease, better means for observation, more available hospitals, specialist services, laboratories, and so on, more time and opportunity for study and education. It wants work made more interesting, less tedious, and so better. There can be no doubt of the sincerity of the desire of medical men for these things.

We want our independence and individualism, so much of it as is essential for progress, but at the same time we want the help of the State; but it is no good for us to say the State must do this and do that, and at the same time to claim complete independence and individualism, or we shall be in the position of the umbrella merchant who, congratulated on the flourishing state of his business because of the continued wet weather, replied: "Yes, that is all very well, but there ain't nothing doing in parasols."

All the factors for progress are now at hand; everything is favourable. Now is our time; the tide is flowing; with our own goodwill and initiative we shall gain the land we seek, but we shall never get there if we wait and let ourselves be caught in the quicksands of doubt and prejudice, that prejudice born of years of mutual mistakes and misunderstandings. What can we do now? Singly and through our various associations we can do much. We can influence and lead the public. We can co-operate with and help the Government in the development of an organized health service. We can influence public men and public bodies. The sum of our individual influences, the combined power of our various associations, must be great. In a more immediate and practical way we can now help to promote the institution of hospitals of all sorts, laboratories, post-graduate clinics, ambulance services, the organization of the work of institutions and private work. We can co-operate more than we have done in the past with public health authorities.

We must watch—must even go out of our way to look for chances to help. We must see what is wanted and act, so far as we can, on our own. If we do not act ourselves in the interest of the public, the State will, must do so for us. It is for us to enrol ourselves in a great voluntary army at the service of the community or submit to conscription. The day is dawning of many much-needed and far-reaching reforms; we must be prepared when it comes.

We have now a great opportunity such as we have never had before to help in the uplifting of medicine and of our profession, and while maintaining what is essential of our individualism and our independence, to show the world that the desire we have deepest in our hearts is the welfare of mankind; we must

> Seize the occasion now while it is nigh,
> 'Tis vain to seek it when it's once gone by.

—I am, etc.,

Bradford-on-Avon, March 27th. CHAS. E. S. FLEMMING.

HEAT HYPERPYREXIA.

SIR,—Having experienced part of the hot season of 1916, the whole of that of 1917, and part of that of 1918 in Mesopotamia, I read with very great interest the authoritative articles by Dr. Willcox and Professor Leonard Hill, and, at the risk of appearing presumptuous, I should like to add the following remarks:

During nearly the whole of the period I was serving with a general hospital at Amara, and 280 cases of effects of heat—E.O.H. (B.)—acute and otherwise, passed through my hands.

With regard to electric fans, after experimenting with a small table fan in my own bunk, the pace of which could be regulated, I found that at high speed the current of air felt like the blast from a furnace, but that a lower speed was cool and refreshing. The high speed evidently caused a too rapid evaporation of sweat. Fans in the wards were fixed near the roof, under which the air was fearfully hot, because the roof was made with corrugated iron, covered with mud. The following year a thick layer of rushes was placed on the iron and mud was plastered over the rushes. The wards were then very much cooler and the hot blast from the fans less noticeable. The great drawback to the rushes was that rats took up their abode there. I found that the best way to keep a ward cool was to have the fans running slowly, with the windows closed on the sunny side and open on the shaded side. The beds in the corners of the wards, where the air was more stagnant, were frequently observed to be bad spots for any one liable to heat-stroke.

With regard to alcohol, I personally believe that a "gin and ginger" at sundown was an excellent thing. Micturition between breakfast and sundown was a rare occurrence, and the small tot of gin provided a useful diuretic and relieved the kidneys and bladder of highly concentrated and débris-ladened urine. All patients were encouraged to drink water very freely.

As to treatment, diaphoretics were of no use at all after the onset of heat-stroke, but many of the cases I had under my care were more or less convalescent from various diseases, and I believe that by ordering them diaphoretic mixture twice daily, with unlimited water, I had fewer cases of either primary or recurrent heat-stroke than in any other ward in the hospital. I regarded constipation as a thing to be avoided at all costs, both from personal experience and observation in the wards.

In acute cases the patient's bed was drawn out from the wall under a fan, and often between the two lateral exits from the ward, which were opened to create a draught. Ice was packed under the occiput and at the sides of the neck and into each axilla, and enemata of ice-water, which Sir James Cantlie had told me of when I was a student, were undoubtedly very effectual. The cold wet sheet was always used. For convulsions and restlessness I personally came to the conclusion that a cold enema containing potassium bromide was of more use than venesection followed by saline. Ice-water enemata have their disadvantages, but, excepting the intravenous injection of quinine in hyperpyrexia complicating malaria, I believe them to be the most useful item of the routine treatment of this very terrible condition.—I am, etc.,

A. H. H. HOWARD, M.R.C.S., L.R.C.P.

Sheffield, March 24th.

THE SAFETY OF ETHYL CHLORIDE.

SIR,—In the recent numbers of the BRITISH MEDICAL JOURNAL (1919, vol. ii, pp. 558, 616, 690, 832) that have reached Australia there has been a discussion on the safety of ethyl chloride as an anaesthetic. The following figures speak for themselves.

At the Melbourne Dental Hospital all our extractions under general anaesthesia are done under ethyl chloride or somnoform (somnoform being 83 ethyl chloride, 16 ethyl bromide, and 1 methyl bromide). During the past thirteen and a half years 34,433 cases have been attended to by this method without a single fatality.

In the vast majority of these cases the anaesthetic has been given by dental students under supervision, each student being required to give forty administrations in his third year and sixty in his fourth year before obtaining his certificate. In every case the administration is given with the patient in the upright position, sitting in the dental chair, and by the open or semi-open method, the air valve of the inhaler always being wide open at the commencement of induction, and then gradually closed over. I am strongly opposed to the completely closed method of induction without the admission of air.

At the Eye and Ear Hospital, Melbourne, all post-nasal and adenoid cases are given open or semi-open ethyl chloride. During the past twelve and a half years over 9,000 cases have been attended to and without a fatality. At the Melbourne General Hospital and the Melbourne Women's Hospital in nearly every case the induction to general anaesthesia is by means of open ethyl chloride. In my own practice, which with hospital cases is certainly not under thirty cases a week, I never start induction for any operation except by open ethyl chloride, and have not done so since 1908. I have never had a fatality. I have used ethyl chloride continuously by the open or semi-open method in every class of work, not only in temperate but also in tropical climates, with the navy and with the army during the recent war, in Australia and France, winter and summer. Ethyl chloride is not fool proof—no anaesthetic is—but given with air, and by a push not a knock-out anaesthesia, it is one of the safest, if not the safest, and is certainly the most convenient form of administration and ahead of the cumbersome nitrous oxide-oxygen method

which is so much in vogue at present. Of course, I am not speaking of it as a continuous form of administration for prolonged operations.

In all my operation cases, with the exception of post-nasal and tonsil cases and dental extractions, I give to males ¼ grain morphine and $\frac{1}{120}$ grain atropine, and to females ⅓ grain morphine and $\frac{1}{150}$ grain atropine, three-quarters to one hour before operation. In anaesthetic administration it is not so much the anaesthetic that counts if a fatality occurs—it is not the gun, but the man behind the gun.—I am, etc.,

R. W. HORNABROOK,
Anaesthetist, Melbourne Hospital, Women's Hospital, Melbourne, No. 11 A.G.H., Melbourne.

Feb. 12th.

AWARDS FOR MEDICAL DISCOVERY.

SIR,—After the deputation to Mr. Balfour which was reported in the JOURNAL of March 6th, 1920, I was asked to publish a letter clearing up several points of difficulty which had arisen; and my letter appeared in *The Times* of March 16th. I am, however, advised to publish a note for the information of medical men.

The proposal of the Conjoint Committee of the British Medical Association and the British Science Guild (see BRITISH MEDICAL JOURNAL, January 3rd, p. 25) was that the State should give £20,000 a year in the form of thirty or more life pensions to men whose medical researches have been of general value to the nation. When this proposal was put before Mr. Balfour several minor difficulties were raised. Thus it was suggested that the selection of recipients would not always be an easy task. But the same difficulty exists whenever any award is made, as, for instance, in selecting new Fellows for the Royal Society, or in giving medals or Nobel prizes, or, indeed, in allotting all public honours. If the mere difficulty of selection is held to be a bar to the feasibility of our scheme, no awards at all could be given. The matter appears to me to be one merely of detail. Registers of all possible candidates must be kept, particularizing the work done by each, and then a proper committee must make the selection. This is done in the similar cases mentioned above. The Council of the Royal Society makes a very careful scrutiny of the claims of candidates for its Fellowship; the procedure of the Nobel Committees is, I believe, still more rigorous, and occupies many months; and let us hope that the State is no less careful before recommending His Majesty to award the valuable distinctions conferred by him. All this costs, indeed, some trouble, but it is generally held that the stimulation of merit is worth the trouble involved. Just the same principle will have to be adopted for the proposed awards for medical discovery. I should add, however, that, in my opinion, the selecting committee should be chosen with particular reference to their own achievements in medical research; and, after the first selections are made, that the men selected should themselves have seats on that committee.

It is impossible to define our proposals further at this stage until it has been decided by what official route the awards are to be given, if and when the general principle has been accepted. Perhaps an extension of the existing Civil List pensions would suffice; but I understand that these are conferred only by the Premier on applications from influential friends of candidates, and I doubt whether this procedure will commend itself to many medical men. Another possible route is by petition to the Chancellor of the Exchequer, according to the precedent of Jenner in 1802; but by rule the Chancellor can refuse to forward such petitions to the House of Commons, and no one will know his reasons for such refusal; so that this again is not a very satisfactory route. A third possible route is to make a legal application to the Royal Commission on Awards to Inventors; but this appears to be difficult for legal reasons which apparently apply to medical discoveries and inventions as distinct from all those made outside the profession. It is argued that medical men are obliged to disclose their discoveries and inventions at once, and that therefore they have no claim for protection or compensation by the State—so that medical men are punished for their own altruism. I know of two cases in which this argument has been actually used already; but I have been informed that I may have the case argued at my expense before the Commission if I like; and, if our other proposals fail, I propose to adopt this procedure, and trust that the profession will not object to my doing so. Personally I think that medical men would prefer a procedure which will enable them to approach the State for compensation through a legal channel and not through the influence of friends or through applications to Ministers. In our opinion, persons who have added greatly to medical science without remuneration for themselves and at the cost of much time and trouble which might have been spent by them more profitably in acquiring or increasing medical practice, have a distinct claim for compensation by the State—as was admitted by Parliament in the case of Jenner.

The personal opinions of private individuals like myself are, however, of little value, and the matter ought to be thoroughly discussed by some committee appointed by Government for the purpose. I urged this upon Mr. Balfour at the deputation and trust that he will accept the idea. But here again the committee which considers the details should contain men who have themselves done medical research of distinction and who therefore know the difficulties attending such labours.

Those who have read the original report of the Conjoint Committee will see that we were in favour of similar awards being given for other branches of science, and indeed for great labours in entirely different fields. They will also know that we do not propose in any way that the funds at the disposal of the Medical Research Committee should be diminished for the sake of the awards which we favour. We are, however, unanimous in the view that such awards should be given in addition to the subventions for current researches allotted by the Medical Research Committee; and I feel sure that the great body of the medical profession will support us in this. In the meantime we are waiting to see whether the Government is going to accept the general principle which we put before it at the deputation.

I was requested by the Conjoint Committee to keep a list of names of possible candidates furnished to me by members of the Committee. I have done so and have received about forty names. Of these I am sure that at least half are the names of men the whole profession would be glad to see rewarded in the way mentioned. Whether all of them would wish for compensation or not, I cannot say, but I am quite sure that some of them need it and that all deserve it.—I am, etc.,

RONALD ROSS.

London, N.W., March 26th.

EARLY DIAGNOSIS OF SYPHILIS.

SIR,—Dr. Bryans's letter in the JOURNAL of March 20th (p. 416) furnishes excellent, though quite unintentional, evidence of the danger of relying solely upon microscopical examination in the diagnosis of syphilis. Dr. Bryans apparently is only prepared to accept a diagnosis of syphilis when the *S. pallida* is shown by dark-ground illumination, and regards Fontana's method of staining as unreliable. In this he is at variance with many pathologists. However, this is a matter of secondary importance; the main point is that syphilitic chancres, which are clinically obvious, not infrequently give negative results with either method. As a result of the false teaching which places laboratory diagnosis before clinical experience, not a few of the victims of syphilis suffer from delayed treatment, or even escape treatment altogether.

With regard to chancroids, Dr. E. Harrison's statement, to which Dr. Bryans takes exception, that chancroid is a rare condition and nearly always has "syphilis at the back of it," is in our opinion perfectly correct. One of us, after an experience of many thousands of cases of venereal diseases in the army, has come to the conclusion that there are very few cases of chancroid pure and simple. These cases are invariably contracted from professional or amateur prostitutes, the great majority of whom are infected with syphilis as well. This accounts for the fact that nine out of ten chancroids are followed by syphilis. Indeed, if all cases of apparent chancroid were treated at once for syphilis, much less harm would be done than by keeping them under observation, and thereby losing invaluable time for the majority which in due course are followed by syphilis.—We are, etc.,

C. F. MARSHALL, M.D., F.R.C.S.,
E. G. FFRENCH, M.D., F.R.C.S.E.,
Major R.A.M.C.

London, W., March 25th.

SHINGLES, VARICELLA, EPILEPSY, AND THE WEATHER.

SIR,—I have read Dr. James Taylor's paper (February 28th, p. 282) with keen interest, as it dealt with subjects which have attracted my attention for a good many years. There is, no doubt, a close connexion between shingles and chicken-pox. At any rate, they frequently occur together or closely follow each other. But whether the one is the cause of the other or both are dependent on a common factor must be left an open question.

There is also a very close relation between shingles and epileptic fits. For instance, on February 9th, the report of the Meteorological Office was "considerable amount of low cloud," and I saw on that day one case of shingles and a patient who had four severe epileptic fits. On February 10th, with "sky mainly covered with low cloud," I had another case of shingles and another of epileptic fits. On February 20th, with "much low cloud," I saw two fits and a case of herpes zoster. At the Exeter Poor Law Institution we know when to expect fits by noting the meteorological readings for the day. It might well be that chicken-pox, like shingles and epilepsy, are "pressor diseases" due to vasomotor changes caused by atmospheric pressure.

There is a clinical fact which I have not seen alluded to before which lends support to the theory that fits are precipitated by arterial hypertension. I allude to their complete cessation in pyrexia. Chronic epileptics who contract a disease by which the temperature is raised immediately become free from fits during that period. I believe that it is the gradual rise of temperature during the fit that brings the attack to an end. On these premisses I have been in the habit of exhibiting vaso-dilators—the citrates, the nitrates—with the occasional addition of bromides to my epileptic patients. When an epileptic states that the bromides do him good, but unfortunately they bring out an ugly rash, the correct thing to do is to administer the drug in combination with vaso-dilators, and the bromide rash will not appear. In the prevention of the bromide and iodide rash vaso-dilators are infinitely superior to the much lauded arsenic.

There is one other disease which has a very close connexion with chicken-pox, and that is impetigo contagiosa. It is a very common experience with me to see this skin disease rampant during an epidemic of chicken-pox, and it is caused obviously by local inoculation in children immune by a former attack of chicken-pox.—I am, etc.,

Exeter, March 1st. J. PERREIRA GRAY.

NASAL HYGIENE OR NASAL DRILL.

SIR,—Nasal hygiene has been systematically practised at the Roll of Honour Hospital, both in the nasal department and in the London County Council aural clinic, and also in the Westminster health centres for a couple of years.

The theory as well as the practice is taught. The mental and physical improvement in nearly every case in which the co-operation of the parents was secured have been very great, and were often obtained in a remarkably short time.

The rules laid down for clearing the nose are based on mechanical principles. Before beginning, the breathing is tested. If a full sigh can be accomplished through each nostril, tested separately, it is considered clear. Sneezing by artificial stimulation is only resorted to where the clearing cannot be effected by mere gentle blowing. Gentleness in dealing with the nose is insisted upon; no blowing is allowed unless or until there is something to come away. No ointment is used, as it is fatally easy to drive offending material inwards. The rules for blowing are:

1. The head is lowered to make an inclined plane for the discharge to invoke the aid of gravity.
2. The nostrils are left widely open so that the discharge may not be forced backwards into any of the danger zones, but, following the line of least resistance, may escape outwards.
3. The blowing is continued—not breaking the thread—till the clearance is complete, so that any of the openings of the tiny cells or sinuses may be sucked clear.

It is also taught on another mechanical principle that sniffing resembles pile driving—the catarrhal discharges being continually driven against the thin bony plates, which may in time yield, or through the openings into the blind chambers, where they find all the conditions for incubation.

The ultimate aim of nasal hygiene, as practised on the above lines, is to get the nose into such order that it may be able to perform its almost incredible number of functions without making its presence felt by its owner.

The term "nasal hygiene" is used instead of "nasal drill" because the latter implies that all children should be enrolled—the harm and damage done to the healthy noses would then be incalculable. The strong protest implied in Dr. Francis's letter will be endorsed by all who are working on preventive lines.—I am, etc.,

London, W., March 3rd. OCTAVIA LEWIN, M.B., B.S.Lond.

Obituary.

SIR JAMES GRANT, K.C.M.G., M.D., Ottawa.

SIR JAMES ALEXANDER GRANT, whose death on February 6th we have already reported, was born in Inverness-shire in August, 1831. His father, Dr. James Grant, soon afterwards removed to Canada. His son was educated at Queen's and McGill Universities, graduated in 1854, and commenced practice in Ottawa, where he resided during the remainder of his long life. He entered the Canadian parliament in 1865; the original Pacific Railway Bill, which embodied the first movement towards the trans-continental railway in Canada was introduced by him, and he supported the admission of the North-West Territories and British Columbia into the Confederation. He ceased to be M.P. in 1873, but entered Parliament again as the representative for Ottawa in 1892, and retained his seat until 1896.

He was President of the Ontario Medical Council in 1868, was for some fifty years member of the Medical Council of the Ontario College of Physicians and Surgeons, and was President of the Royal Society of Canada in 1901. He was Vice-President of the Department of Surgery of the International Medical Council in Philadelphia in 1876, and of the International Medical Congress at Washington in 1887. He was a member of the Royal College of Surgeons of England, a Fellow of the Royal College of Surgeons of Edinburgh, and was elected a Fellow of the Royal College of Physicians of London in 1882. He was much interested in the British Medical Association, was elected an honorary member in 1886, and attended the annual meeting in Montreal in 1897. He received the K.C.M.G. at Queen Victoria's first Jubilee in 1887.

Sir James Grant was an effective public speaker, and during his time took a large part in Canadian public life. He had been in failing health for some years, and on January 20th suffered a fracture of the femur, when he was removed to St. Luke's Hospital, of which he was one of the founders. He took much interest in tuberculosis, a subject upon which he wrote much, and was president of the Tuberculosis Association of Canada in 1901. Sir James Grant married the daughter of Mr. Edward Malloch, M.P., in 1856, by whom and by seven children he is survived. The funeral was attended by representatives of the Governor-General and the Royal Society of Canada and by many members of the medical profession.

WE regret to record the death of a veteran practitioner, Dr. THOMAS MELANCTHON EVANS of Hull, who died on March 15th. He was born at St. Neots in 1838, and was educated at Christ's Hospital and St. Bartholomew's Hospital, taking the diplomas of M.R.C.S. and L.S.A. in 1861. He commenced practice in Hull, and succeeded his brother in the post of house surgeon at the Hull Royal Infirmary, to which he ultimately became consulting surgeon. Up till two years ago he was surgeon to the Hull Trinity House and took great interest in the inmates. He was a past president of the East York and North Lincoln Branch of the British Medical Association and of the Hull Literary and Philosophical Society. He leaves one daughter and three sons, one of whom is Dr. H. L. Evans, in practice at Hull. The funeral took place on March 18th, and was attended, among others, by representatives of the medical profession, the Hull Royal Infirmary, and Trinity House.

DR. THOMAS MILNE of Aberdeen died on March 16th in his 73rd year. He was born at Ellon, and received his education at the Gymnasium, Old Aberdeen, and at Aberdeen University; he graduated M.A. in 1868, M.B. and C.M. with honours in 1871, and M.D. in 1874. After serving as resident assistant surgeon to the Aberdeen Royal Infirmary he practised in several places, and eventually settled at Accrington, where he held the post of M.O.H. He returned to Aberdeen in 1892 and built up a large practice. He served as president of the Aberdeen Branch of the British Medical Association in 1913, and of the Aberdeen Philosophical Society and Aberdeen Medico-Chirurgical Society. He was a retired surgeon captain of the 2nd Volunteer Brigade, East Lancashire Regiment. Dr. Milne is survived by three sons and two daughters, the youngest son being Captain Herbert Stewart Milne, R.A.M.C., M.C.

Universities and Colleges.

UNIVERSITY OF OXFORD.

CHARLES PUTNAM SYMONDS, M.A., M.D., M.R.C.P., assistant physician for nervous diseases, Guy's Hospital, has been elected to a Radcliffe Travelling Fellowship, tenable for three years.

UNIVERSITY OF LONDON.

MILITARY EDUCATION.

THE Military Education Committee, which administers the Officers' Training Corps, has recently presented its eleventh annual report, covering the year 1919. The establishment consists of one artillery unit, one engineering unit, an infantry unit (one battalion of three companies), an Army Service unit (one transport and supply company), and a medical unit consisting of four sections of a field ambulance. In the medical unit the number of officers was eleven and the number of cadets in training during the year 347. The Committee has discussed the future organization of the O.T.C. with a view to drawing attention to certain disabilities suffered during the war. A conference of past and present officers of the medical unit was held in July and its report forwarded by the Committee to the War Office. Later a conference of the combatant units was convened, and finally the Committee made certain recommendations which have been forwarded to the Secretary of State for War, with an indication that the Senate would welcome the appointment of a War Office Committee to consider the future of the Officers' Training Corps. The recommendations included a suggestion that the Senior Division O.T.C., composed of contingents provided by universities, should be organized as a distinct corps and that, save in special circumstances, commissions in the Regular Army (university commissions), Special Reserve, and Territorial Force should be granted only to persons who have received training provided in the Officers' Training Corps or equivalent training. It is suggested that the present Junior Division O.T.C. should not form part of this corps, but be given a distinct name and organization. It was suggested also that provision should be made for all branches of special military work, particularly those involving the application of science to war and that the universities should receive grants to cover all approved expenses. The report has been forwarded to other universities of the United Kingdom.

UNIVERSITY COLLEGE.

The annual report shows that the total number of students in 1918–19 was 2,048. The increase of 977 on the previous year took place mainly in January, 1919; it was due almost exclusively to entrance of ex-service men, most of whom, under special arrangements made for their benefit, were able to complete a full session's work by the beginning of August. The total revenue of the college was £77,824, leaving a deficit of £2,210, due to the necessary increases in salaries and the general increased cost of conducting the college. An appeal is made for £30,000 for a war memorial, to include the erection of a great hall for the use of the college and medical school, and the endowment of University College Hall, Ealing. Towards this amount £5,000 has been subscribed. The chairman, Sir Gregory Foster, and the vice-chairman, Dr. G. Blacker, of this War Memorial Fund of University College and University College Hospital, ask all former students of the college and medical school to send their names and addresses to the hon. secretary, Mr. Lawrence Solomon, at the college.

UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examinations indicated:

THIRD M.B., CH.B. (*General Pathology and Morbid Anatomy*): R. H. Allison, V. Chadwick, N. S. Craig, Caroline M. Edwardes-Evans, A. W. Kirkham, Margaret Pownall, H. D. Preston, Bertha Renshaw, Florence G. Sherry.

D.P.H. (*Part II*).—Ahmed Aziz, J. P. Broom, J. H. Campain, T. E. Dickinson, W. E. Fitzgerald, J. R. Jagger, E. F. Hill, M. R. Soni, A. V. Stocks, C. F. White.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

THIRD M.B. (*Materia Medica, Pharmacology and Pharmacy, Public Health, Medical Jurisprudence, Pathology and Elementary Bacteriology*).—*L. Myers, F. J. Benjamin, J. J. N. Daniels, Dorothy E. Elliott, R. Hewitson, J. Jackson, M. Mickler, Joan W. Nicoll, R. J. Perring, S. T. Pybus, Mary F. Richardson, Olive C. Wilson, Philomena R. Whitaker.

* With second class honours.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony on March 24th the following were among the degrees conferred:

LL.D. (*honoris causa*): Dr. William Bulloch, F.R.S., Professor of Bacteriology, University of London; Sir Robert Jones, K.B.E., C.B., late Major-General A.M.S. and Inspector of Military Orthopaedics; Dr. David Nicolson, C.B., Lord Chancellor's Visitor in Lunacy and Medical Adviser of the Home Secretary in criminal mental cases.

M.D.—A. S. Garden, J. Leask, Helen Lillie.

M.B., CH.B.—M. Y. Garden (with second class honours), Dorothy E. Bryant, A. V. R. Don, C. A. Hay, Dorothy M. Holmes, Alice M. L. Innes, R. C. MacLennan, J. M. Stuart, D. M. Thomson, Ida E. Wood.

D.P.H.—A. G. B. Duncan, R. R. Garden, E. A. Mackenzie, L. M. V. Mitchell, Anne Simpson.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved at the examinations indicated:

M.B., CH.B. (*Medical Jurisprudence and Public Health*).—A. Barr, A. R Black, D. E. Brown, T. C Christie, W. Davie, P. A. Faichney, W. M. Hamilton, *H. W. Howieson, T. D. Hunter, D. Imrie, L. M. Johnston, J. Lavelle, W. R. M'Crae, P. M'Luskie, J. M. L. Mitchell, T. N. Ray, I. MacR. Sandilands, J. Shulman, J. M'L. Strang, A. R. Waddell, J. W. Walker, R. J. Watson, J. C. Watt, J. H. Wilson, P. A. Wilson, J. Young, Annie Barlow, Rosa Bass, Elizabeth M. V. H. B. Bird, Ellen B. Cowan, Elizabeth J. Findlay, Brunnhilde M. Grieve, Effie Niblock, Carolina J. Tessier.

M.B., CH.B. (*M., Materia Medica and Therapeutics; P., Pathology*).—R. Adam (M.), T. F. Arnott (M.), A. Baird (M.), J. Barlow (M.), *A. A. Bell (M., P.), A. L. Brough (M.), G. Brown (M.), M. Brown (M.), A O. Bruce (M.), T. M. Burton (M.), A. Cameron (M.), J. I. Cameron (M., P.), A. J. G. Caporn (M.), *D. F. Cappell (P.), A. Chisholm (M.), J. G. Craik (M., P.), J. S. Currie (M., P.), A. C. Dewar (M., P.), J. Dewar (M.), M. Douglas (P.), J. A. Dunlop (M., P.), A. Gibb (M., P.), A. H. Greig (M., P.), H. G. Halliday (P.), D. R. Hamilton (P.), G. Harvey (M.), E. E. Henderson (M.), T. H. Irvine (M.), W. Jope (P.), H. Kay (M.), W. M. Kennedy (M.), A. A. Kirkland (M.), F. J. Kitt (M.), J. R. Learmouth (M.), J. Leishmann (P.), J. A. Lister (M.), Alexander Logan (M.), Andrew Logan (M., P.), G. H. Macartney (M.), W. M. M'Cash (P.), T. S. MacDonald (M., P.), J. M'Dougall (M., P.), W. D. Macfarlane (M.), W. M. Macfarlane (P.), J. J. M'Ghee (M., P.), T. J. M'Karl (M.), W. M'Kendrick (M.), J. M. Mackenzie (M., P.), P. M'K. M'Ellop (M.), J. M'Nair (M., P.), W. B. M'Queen (M., P.), D. Meikle (M., P.), N. Meilamed (M., P.), C. Melville (P.), H. R. Melville (M.), W. Muir (M.), I. Murray (M.), F. J. Newall (M.), R. A. S. Peacock (M.), T. D. Pyle (P.), G. W. StC. Ramsay (M., P.), A. H. Rankin (M., P.), T. N. Ray (P.), A. M. Robertson (M.), W. Robinson (M.), J. Y. Scott (M.), C. M. Smith (M.), D. Stewart (M., P.), A. Symon (M.), W. L. Templeton (M.), D. M. Thompson (M., P.), J. C. Watt (P.), A. F. Whyte (M.), *J. Wilson (P.), R. MacL. Wilson (M., P.), *J. Yule (M., P.), Edith A. Allan (P.), Isabel P. Allan (M.), Martha L Anderson (P.), Marion C. Boyd (M.), Mary D. A. Boyd (M.), Georgie I. Brodie (P.), Elizabeth E. Brown (M.), Margaret E. Campbell (M.), Gladys M. Chapell (P.), Christabel L. M. Charlesworth (M., P.), Elizabeth Coupland (P.), Isabella C. Darling (M.), Christian D. H. Eason (M.), Jean MacF. Gilchrist (P.), Christina Gray (M., P.), Catherine Hill (M.), Isobel R. Hill (M.), Annie W. Humble (M.), Moira E. N. MacAlpine (P.), Joan A. MacColl (M.), Mary M'Quaker (P.), Henrietta L. Paterson (M.), Joanna T. Rae (P.), Helen Y. Stoddart (M.), Jeanie M. Strathie (M., P.), Adeline G. Vallance (P.), Jeanie L. D. Wilson (P.). Old Regulations (*Pathology*): D. S. Buchanan, A. M'C. Millar, R. R. Waters.

* With distinction.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia of the Royal College of Physicians of London was held on Monday, March 29th, at 5 p.m. The President, Sir Norman Moore, delivered the annual presidential address, in which he stated that the College list now contained the names of 357 Fellows, 506 Members, 1 extra-Licentiate, 13,800 Licentiates, 863 Diplomates in Public Health, and 18 Diplomates in Tropical Diseases. He gave lists of the honours conferred by the King upon Fellows, Members, and Licentiates, and then read short obituary notices of the 11 Fellows who have died since the delivery of the last address a year ago—namely, Dr. F. J. Smith, Dr. Joseph Wiglesworth, Dr. G. B. Brodie, Dr. E. G. Fearnsides, Professor W. S. Greenfield, Dr. Charles Mercier, Dr. Guthrie Rankin, Sir William Osler, Dr. Laurence Humphry, Sir James Alexander Grant, and Dr. Samuel Hatch West.

The election to the office of president for the ensuing year was held, Sir Norman Moore being re-elected. He then gave his faith to the College in the prescribed form.

Licences to practise were granted to George Cleverdon Hartley, Birmingham University, and to Kathleen Suzanne Vine, Royal Free Hospital.

The President returned thanks to the College and then closed the Comitia.

THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE elections for the three vacancies on the Council of the Royal College of Surgeons will be held on Thursday, July 1st. Sir Anthony Bowlby, Mr. W. Harrison Cripps, and Sir D'Arcy Power, all of St. Bartholomew's Hospital, retire at the expiration of their terms of office. Mr. Harrison Cripps will not seek re-election, but the other two out-going members intend to come forward. There will thus be seven candidates, two for re-election and five for election. The new candidates are: Mr. W. Thelwall Thomas, of Liverpool, Member 1886 and Fellow 1890; Mr. John Herbert Fisher, ophthalmic surgeon, St. Thomas's Hospital, Member 1891, Fellow 1893; Mr. Herbert Stringfellow Pendlebury, Member 1896, Fellow 1897 (St. George's Hospital); Mr. Francis James Steward, Member 1895, Fellow 1898 (Guy's Hospital); and Mr. Victor Bonney, Member 1896, Fellow 1899 (the Middlesex Hospital).

The Services.

THE SPECIAL RESERVE, R.A.M.C.

A CORRESPONDENT writes: I should like to state two grievances of the Special Reserve Officer R.A.M.C. which so far have not been mentioned by any of your correspondents. It is laid down in the conditions of service for Officers Special Reserve R.A.M.S.: (1) That on mobilization £50 would be paid for disturbance and extra kit. (2) That a retaining fee of £20 per annum would be paid while disembodied.

As regards (1), officers who joined early in the war were unable to obtain this sum. As regards (2), I recently applied for the retaining fee after being disembodied over twelve months. I received a reply informing me that a War Office letter of October 30th, 1919, had stopped the payment of the retaining fees for Special Reserve Officers. That the War Office can alter the terms of service in this manner will prove the last straw in my case, and will certainly cause my resignation when this is permitted. I shall join as a temporary officer if necessary on any future occasion.

THE NEW TERRITORIAL ARMY.

THE following appointments to Divisions of the new Territorial Army are announced:

HIGHLAND DIVISION.

Medical Service.—Colonel F. Kelly, C.B.E., appointed A.D.M.S.; Captain J. F. Macintosh to command 1st Highland Field Ambulance, R.A.M.C.; Lieut.-Colonel D. Rorie, D.S.O., to command 2nd Highland Field Ambulance, R.A.M.C.; Major A. E. Kidd, O.B.E., to command 3rd Highland Field Ambulance, R.A.M.C.

EAST LANCASHIRE DIVISION.

Medical Service.—Colonel W. Ranson, D.S.O., appointed A.D.M.S.; Major G. W. Fitzgerald, O.B.E., to command 1st East Lancashire Field Ambulance, R.A.M.C.; Major A. Callam, D.S.O., to command 2nd East Lancashire Field Ambulance, R.A.M.C.; Major E. H. Cox, D.S.O., to command 3rd East Lancashire Field Ambulance, R.A.M.C.

WEST LANCASHIRE DIVISION.

Medical Service.—Major C. H. Lindsay, C.M.G., D.S.O., appointed A.D.M.S.

NORTH MIDLAND DIVISION.

Medical Service.—Major T. A. Barron to command 1st North Midland Field Ambulance, R.A.M.C.; Captain J. F. Dixon to command 2nd North Midland Field Ambulance, R.A.M.C.; Major A. E. Hodder, D.S.O. (T.F.R.), to command 3rd North Midland Field Ambulance, R.A.M.C.

SOUTH MIDLAND DIVISION.

Medical Service.—Colonel L. J. Blandford, C.B.E., appointed A.D.M.S.; Lieut.-Colonel C. H. Howkins, C.B.E., D.S.O., to command 1st South Midland Field Ambulance, R.A.M.C.; Captain R. A. Broderick, D.S.O., M.C., to command 2nd South Midland Field Ambulance, R.A.M.C.; Captain T. A. Green, D.S.O., to command 3rd South Midland Field Ambulance, R.A.M.C.

WELSH DIVISION.

Medical Service.—Major T. Donovan to command 1st Welsh Field Ambulance, R.A.M.C.; Major H. T. Samuel to command 2nd Welsh Field Ambulance, R.A.M.C.; Major C. L. Isaac to command 3rd Welsh Field Ambulance, R.A.M.C.

WESSEX DIVISION.

Medical Service.—Colonel H. Pickard, C.B., C.M.G., appointed A.D.M.S.; Captain R. Burgess, D.S.O., M.C., to command 1st Wessex Field Ambulance, R.A.M.C.; Major T. P. Puddicombe, D.S.O., to command 2nd Wessex Field Ambulance, R.A.M.C.; Brevet Lieut.-Colonel E. B. Bird, D.S.O., to command 3rd Wessex Field Ambulance, R.A.M.C.

WEST RIDING DIVISION.

Medical Service.—Colonel A. D. Sharp, C.B., C.M.G., appointed A.D.M.S.; Captain W. Lister to command 1st West Riding Field Ambulance, R.A.M.C.; Major F. Whalley, D.S.O., to command 2nd West Riding Field Ambulance, R.A.M.C.; Lieut.-Colonel J. Mackinnon, D.S.O., to command 3rd West Riding Field Ambulance, R.A.M.C.

Medical News.

THE course of lectures and demonstrations in medical psychology at the Maudsley Mental Hospital, Denmark Hill, S.E., has begun, and is, we learn, being attended by a class of 35. The course is arranged to meet the requirements for the Cambridge diploma in psychological medicine.

THE annual meeting of the Society for the Study of Inebriety will be held at the house of the Medical Society of London, 11, Chandos Street, W.1, on Tuesday, April 13th, when Dr. Maurice Nicoll will open a discussion on analytical psychology in alcoholism.

A THREE months' course of lectures and demonstrations in hospital administration will be given at the Western Hospital, Seagrave Road, Fulham, by Dr. R. M. Bruce, medical superintendent, on Tuesdays and Fridays, beginning on April 6th. The fee for the course is £3 3s., and cheques should be made payable to the Metropolitan Asylums Board.

A SERIES of post-graduate lectures, arranged by the Faculty of Medicine of the University of Sheffield, will be given during April, May, and June on Wednesdays, at 4 p.m., in the Royal Hospital, Royal Infirmary, or Pathological Museum, beginning April 7th. The lectures are open to all members of the medical profession, free of charge. They will be announced week by week in the Diary of post-graduate courses in the SUPPLEMENT.

TWO Grocers' scholarships for the encouragement of original research in sanitary science are declared vacant. Each is of the value of £300 a year, with an allowance to meet the cost of apparatus and other expenses in connexion with the work. Each scholarship is tenable for one year, but may be renewed for a second or third year. Further particulars will be found in our advertising columns.

THE Ministry of Health has revived Article 4 of the Poor Law Institutions Order, 1913 (suspended during the war), which requires the removal from workhouses of normal children over 3 years of age. The State Children's Aid Association writes to protest against suggestions which have been made to the effect that one workhouse in a district should be emptied of adult inmates to make room for children from several neighbouring unions. It is objected that large buildings and institutional discipline of work and play will not make up to a child for separation from family life. Guardians are urged to extend the system of boarding-out, and to offer better terms; and also to give increased out-relief to widows to enable them to keep their children with them. The Ministry of Health has just issued a memorandum calling the attention of guardians to Section 9 of the War Pensions Act, 1918. It imposes upon the Minister of Pensions the duty of providing for the care of children of deceased or serving officers or men in the naval, military, or air services, if such children, owing to their being motherless, or for any other reason, are suffering from neglect or want of proper care. It is asked that the guardians should in such cases communicate with the local War Pensions Subcommittee.

DR. T. F. HIGGS, medical officer of the Poor Law institution, district medical and public vaccinator of the Dudley Union, has been presented by the officers of the union with a framed portrait of himself as a mark of their high esteem. Dr. Higgs has been medical officer of the Poor Law institution for forty-four years and a district medical officer of the union for sixty years. At Dr. Higgs's request the portrait will be hung in the committee room.

THE Railway Clearing House has issued a pamphlet designed to convince the public that the increases in railway rates for the carriage of commodities do not appreciably affect the consumer. It contains much curious information, and may provide the long-suffering public with arguments when increased freight charges are assigned as a cause for raising prices. To carry fresh meat from Southampton to Birmingham costs ½d. a pound more than before the war; to carry fruit from Southampton to Sheffield less than half a ½d. a pound more. The increase on carrying fish from Grimsby to London is 1d. on 12 lb., and on the carriage of salmon

from Aberdeen to London one-third of 1d. a pound. The carriage of 25 lb. of butter from Aylesbury to London costs 1d. more, and so on. Another way of looking at the matter is that fish is conveyed by passenger train from Grimsby to London at a charge of ½d. a pound, from Aberdeen to London—a distance of 525 miles—by express train for just over ½d. a pound. Attention is called to the fact that there has been no increase in the charge for the carriage of fresh milk, nor in the goods train rates for manure, basic slag, or lime for agricultural purposes.

Letters, Notes, and Answers.

In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin, and of the Scottish Office, 6, Rutland Square, Edinburgh.

QUERIES AND ANSWERS.

"HEBRIDES" asks whether asthma is a common antecedent of pulmonary tuberculosis.

HAY FEVER.

DR. W. ROSSELL JUDD (Ashton-under-Lyne) writes in reply to "R. A. J." in the BRITISH MEDICAL JOURNAL of March 27th: The worst case of hay fever I have seen was that of a lady, aged 24, who consulted me about six years ago. The attacks generally began about the middle of May or beginning of June. Owing to the severe frontal headache and facial disfigurement caused by the acute catarrhal conditions of eyes and nose she confined herself to her room and spent her time in mopping up the secretions with innumerable handkerchiefs. She derived some relief from going to the seaside for six weeks or more away from the graminaceous pollen. At the end of December following the last attack I tried the patient's susceptibility by means of the "Hay Fever Reaction Outfit" (Parke, Davis, and Co.); the red tube gave a very slight reaction, the green tube a fairly severe reaction. I therefore hit upon an intermediate course of dosage, and began in the first week in January, following the last with 0.5 c.cm. intramuscular injections of 100 units strength of pollacine (Parke, Davis, and Co.) twice weekly up to the end of March. In April and May I gave 1 c.cm. weekly. In order to ascertain the patient's immunity I advised her to take a walk in the country and amongst hay fields. Her report was "that after a two hours' walk amongst growing hay she felt a tickling sensation in the nose, with some slight watering of the eyes." Apart from this she was free from any attack. The following January (twelve months after) I gave her 1 c.cm. injections of the same strength weekly from January to the end of April, and since then she has not had any further attacks.

INCOME TAX.

"E. M." was demobilized on November 26th, 1919, and earned nothing until February 6th, 1920, when he "bought a small nucleus from which he will receive nothing in the current year to April 5th, 1920." How should he fill in his income tax declaration for that year?

*** "E. M." is liable on his net earnings from February 6th to April 5th, 1920, even though he may not receive any portion of those earnings in cash by the latter date; naturally it will be necessary to make an estimate for the two months, unless he can ascertain from his predecessor what a twelve months' average would be, in which case he might take $\frac{2}{12}$ of that amount. The military pay, but not the gratuity, should be shown on the statement of total income (page 3 of the form), and also the gross amount of the taxed dividends in the space provided on the same page.

LETTERS, NOTES, ETC.

ACUTE PULMONARY OEDEMA.

DR. H. CAMERON KIDD (Bromsgrove) writes: A vivid and accurate description of death from acute oedema of the lungs may be found in Zola's book, *Fécondité*, chap. iii, bk. v, pp. 554-560 of the 1899 edition—a book, by the way, which I wish might be translated into plain British vernacular, and distributed to every mother's union and infant centre in the country. It was this description that first taught me of the disease. In the case of almost any other writer of fiction one would have dismissed with a smile, as a novelist's error, the sudden attack of "congestion pulmonaire" which killed a perfectly healthy robust young woman in one night; but, knowing Zola's accuracy in matters medical, I looked up the subject, and have since been aware of the disease, though I never saw a case in thirty years of busy practice. Perhaps the disease is more frequently met with on the Continent than it is in England. In Zola's case—almost certainly authentic—the preliminaries included a severe wetting from a thunderstorm in the afternoon and a hearty supper of crayfish, which suggests urticaria from food poisoning, as pointed out by Dr. Stewart McNaughton, though the author evidently attributed the whole to the wetting, without suspecting the crayfish in any way.

CO-OPERATION IN HEALTH WORK.

ON the fifth Sunday in Lent, after evensong in Giggleswick-in Craven Church, Dr. J. Johnstone Jervis, medical officer of health for Leeds, gave an address on "The Child." He spoke of the pre-natal effects of the racial poisons—syphilis and intemperance—and referred to the need of wise care in the management of infants during the first four weeks after birth, during which period the greatest number of deaths under 1 year took place. The mortality continued high during the first year, and in the majority of cases, he said, death was due to bad mothering. No mother, he said, had a right to delegate the feeding of her baby to a nurse or firm of patent food manufacturers; 90 per cent. of mothers could nurse their babies, but the majority would not try. The country wanted to know why only 36 per cent. of her sons were found to be A1 men. Dr. Jervis suggested that the answer was that England had lost the art of producing mothers. "Let England," he said, "replace the mother on her throne, and so will she save herself and remove her reproach." We are told that the address produced a great impression on the congregation, and the vicar, the Rev. T. P. Brocklehurst, in a note appeals for more active co-operation between the medical and clerical vocations. "We need," he writes, "more of such enlightenment in our pulpits; after all, we have to deal with *this* state of existence, which we do know something about." The same post brings a statement put out by the Public Health Service of the United States. The Surgeon-General of that service has recently stated that one man in every three called up for the army of the United States was found to be physically unfit. He summoned a conference of the American Red Cross, Public Health Association, Medical Association, Tuberculosis Association, and other bodies concerned to consider a programme for co-ordinated work, founded on the results of the co-operation between the American Red Cross, the State and local health authorities, and the United States Public Health Service in the extra-cantonment work during the war. The American Red Cross has set aside some millions of dollars for health work in the United States and intends to co-operate with existing health agencies.

GOOD AND BAD JUGS.

"H. K. W." says that in jugs, if the handle is moulded in one with the body, a hollow is often left in the handle where it joins the inside of the jug. As it is practically impossible to clean this hole, milk will remain in it day after day, so that fresh liquids will be contaminated. The right jugs to buy are, he says, those with the handle pressed on to the body, leaving the inside surface unbroken.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 37, 38, 39, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 36 and 37.

THE following appointments of certifying surgeons are vacant; Bradford, North East (York, West Riding), Burton-upon-Trent (Stafford), Llandilo (Carmarthen), Waterford (Waterford).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.